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Final Environmental Impact Statement for Revision of the Inyo National Forest Land Management Plan

Volume 2: Appendices

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Appendix A – Timber Suitability and Management

Determination of Suitability for Timber Production

Timber production is the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use (36 CFR 219.19). Timber production activities can contribute to social, economic, and ecological sustainability. Timber production may offset some or all of the costs of silvicultural treatments and other forest management activities that restore ecosystems to desired conditions, lower uncharacteristic fire and insect risk, increase understory plant diversity and abundance, and create employment opportunities.

The National Forest Management Act requires that the agency determine the suitability of National Forest System lands for timber production and has specific requirements for timber suitability analysis in land management plans. Note that there is a distinction between timber harvest as a resource use (that is, timber production) and timber harvest as a management tool to achieve desired conditions. Timber harvest on lands classified as not suitable for timber production may be utilized as a tool designed to achieve desired conditions.

Lands that May be Suitable for Timber Production

Identification of lands that may be (tentatively) suitable for timber production is the first step in the process of determining lands that are suited for timber production. This preliminary classification is made prior to consideration of objectives and desired conditions as part of the forest plan revision process, and excludes National Forest System lands that are not suitable for timber production based on the following criteria:

- Timber production is prohibited by statute, executive order, regulation or where the Secretary of Agriculture or the Chief of the Forest Service has withdrawn the land from timber production. Examples include designated wilderness areas, designated wild river segments, research natural areas or other designated areas where timber production is specifically prohibited.
- Land that is not forested (nonforest), identified by having less than 10 percent occupation by conifer trees of any size or having a nonforest use (powerline clearings, residential or administrative sites, and improved pasture).
- Known environmental factors exist that preclude reasonable assurance that restocking can be achieved within 5 years of final regeneration harvest.
- Technology to harvest timber is not currently available without causing irreversible damage.

Forest lands that remain after this initial screening are termed “lands that may be suitable for timber production,” and do not vary by alternative. Based on this initial suitability analysis, the Inyo National Forest has 85,025 acres that may be suitable for timber production as shown in Item C on the last row of Table A-1.

Table A-1.Acres of National Forest System lands that may be suitable for timber production

Land Classification Category	Acres
A. Total National Forest System land	1,990,042
B. Lands not suited for timber production due to legal or technical reasons	1,905,017
a. Land withdrawn from timber production	1,555,616
b. Nonforested lands and/or lands where adequate stocking is not assured	349,400
c. Lands where irreversible resource damage is likely	0
C. Lands that may be suited for timber production	85,025

The planning directives (FSH 1909.12 chapter 61.11) list the following areas as lands on which timber production is prohibited or lands withdrawn from timber production: National Wilderness Preservation System, designated wild river segments, research natural areas, and other designated areas where timber production is specifically prohibited. These areas along with inventoried roadless areas were removed as *lands not suited for timber production due to legal or technical reasons* (Table A-1). While there are exceptions to the removal of inventoried roadless areas in the Roadless Rule (294.13(b)(4)), the inventoried roadless areas on the Inyo National Forest do not meet the "substantially altered" exception. The Pacific Crest Trail Management Area is included in lands suited for timber production as timber harvest and related management actions would be designed to be compatible with desired conditions and objectives for a naturally appearing landscape surrounding the trail.

As stated above, nonforested lands have less than 10 percent occupation by conifer trees. This was represented using 10 percent canopy cover as identified in the "Existing Vegetation" corporate geographic information system data layer.

The following Regional Dominance Types (CALVEG Forest Types) are recognized as capable of adequate restocking within 5 years: Eastside Pine, Jeffrey Pine, Mixed Conifer Fir, Red Fir, and White Fir. All other CALVEG Forest Types are currently regarded as not capable of the same level of reasonable assurance and are excluded. On the Inyo National Forest, slopes exceeding 35 percent are excluded from timber production.

Lands Suitable for Timber Production

The final step in determining lands suitable for timber production is to determine which of the lands that may be suitable for timber production are suited for timber production. The following land categories have objectives that are not compatible with timber production and are not suitable.

- Recommended wilderness areas included in each alternative.
- The corridor (approximately one quarter-mile on each side) surrounding wild river segments of eligible wild and scenic rivers.
- Riparian conservation areas.
- Eligible or suitable wild river segments.

The remaining lands meet the following criteria and are defined as suitable for timber production.

1. Timber production is a desired primary or secondary use of the land.
2. Timber production is anticipated to continue after desired conditions have been achieved.
3. A flow of timber can be planned and scheduled on a reasonably predictable basis.
4. Regeneration of the stand is intended.
5. Timber production is compatible with the desired conditions or objectives for the land.

On lands not identified as suitable for timber production, harvest may still occur to protect multiple-use values, other than timber production. Common examples include salvage, sanitation, public health, or safety, but may also include various other restoration activities. For example, meadow restoration may require cutting encroaching trees. This activity may produce timber, but the area treated would have objectives other than timber production and would not be identified as part of the suitable landbase.

The Inyo National Forest includes approximately 70,608 to 85,025 acres that are suitable for timber production, depending on the alternative (see Table A-2 for specific information). Lands suitable for timber production are lands where this use is a management objective. Site-specific project designs incorporate actions to meet a variety of objectives, such as riparian area enhancement, habitat maintenance or development, scenic stability, and integrity.

Table A-2. Acres of timber production suitability, Inyo National Forest

Land Classification Category	Alternative A	Alternative B	Alternative B-modified	Alternative C	Alternative D
C. Lands that may be suitable for timber production	85,025	85,025	85,025	85,025	85,025
D. Lands where management objectives limit timber harvest	0[1]	12,792	12,792	14,417	12,792
a. Recommended wilderness areas	0	11	11	1,636	11
b. New eligible wild river segments	0	4,399	4,399	4,399	4,399
c. Riparian Conservation Areas (RCAs)	0	8,382	8,382	8,382	8,382
E. Lands not suitable for timber production	1,905,017	1,917,808	1,917,808	1,919,434	1,917,808
F. Lands suitable for timber production (total)	85,025	72,234	72,234	70,608	72,234

It is important to note that between the draft environmental impact statement and the final, several corrections were made to the determination of suitable lands. Approximately 4,000 acres

[1] Previous existing land where management objectives limit timber harvest were removed in step B in Table A-2 above to facilitate comparison of alternatives for this analysis.

administered by the Inyo National Forest omitted by mistake in the draft environmental impact statement have been added to the final for the determination of suitable lands. Also, eligible wild river segments that were missed in the draft environmental impact statement have been removed from suitable lands under *lands where management objectives limit timber harvest* in the final environmental impact statement (Table A-1).

Other changes made in the final environmental impact statement include the removal of new eligible wild river segments from suitable lands, updated wilderness boundaries in Alternative C, and the removal of riparian conservation areas from suitable lands. Timber production is defined as the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use (36 CFR 219.19). The determination that riparian conservation areas are not suitable for timber production is based on this definition and consideration of the five criteria stated above, especially number five which states that timber production is compatible with the desired conditions or objectives for the land designed to fulfill requirements of (36 CFR 219.8 to 219.10).

In the final environmental impact statement, timber management activities along with prescribed burning and other management tools, are used to make progress towards desired conditions, maintain healthy riparian vegetation resilient to wildfire and maintain habitat conditions for at-risk plant and animal communities while restoring highly diverse ecosystems that provide for ecological integrity. Plan components are established to provide for timber harvest for purposes other than timber production that protect riparian conservation area values including soils, riparian vegetation, at-risk species habitat and water quality. The change in timber production suitability classification affects 8,382 acres with no predicted change in operational timber harvest between alternative A and alternative B-modified.

Planned Timber Sale Program

The planned timber sale program is an estimate of forest product yields associated with projects designed to contribute to the accomplishment of the plan's desired conditions and objectives, consistent with the other plan components during the plan period (by decade). These estimates are based on the projected fiscal capability and organizational capacity of the planning unit. They do not require any specific actions to be taken, rather, they are estimates of actions taken to accomplish the intent of the final Plan.

The timber sale program contributes to economic sustainability through the production of timber, specialty woods for furniture, and fuel as a renewable energy source. Timber harvest, whether for wood production, restoration, or other reasons, can support local businesses and employment.

Sustained Yield Limit

The sustained yield limit is the amount of timber, meeting applicable utilization standards, "which can be removed from [a] forest annually in perpetuity on a sustained yield basis" (National Forest Management Act at section 11, 16 USC 1611; 36 CFR 219.11(d)(6)). It is the volume that could be produced in perpetuity on lands that may be suitable for timber production. The calculation of the sustained yield limit is not limited by land management plan desired condition, other plan components, or the planning unit's fiscal capability and organizational capacity. The sustained yield limit is not a target but is a limitation on harvest.

The sustained yield was calculated on the acreage of the dominant forest types (by acreage). A representative productivity class was determined by evaluating the full range of forest inventory analysis plots for each modeled forest type. The modeling process used two forest stand

development models, Conifers and the Forest Vegetation Simulator (FVS). Conifers was used to simulate the growth and development of seedling conifers for the first two decades and FVS was used beyond that timeframe. Thinning was simulated, based on a stand density index density management regime that maintained stand-level index values between estimated full stocking and threshold of imminent mortality bounds. Mean annual increment and periodic annual increment values were calculated by FVS. The length of the simulation was extended through the culmination of mean annual increment and the associated cubic feet per acre value was identified for each forest type.

The total sustained yield limit is 40 million cubic feet (MMCF) per decade.

Projected Timber Sale Quantity

The projected **timber** sale quantity is the estimated quantity of timber meeting applicable utilization standards that is expected to be sold during the plan period. As a subset of the projected **wood** sale quantity, the projected timber sale quantity includes volume from timber harvest for any purpose from all lands in the plan area based on expected harvests that would be consistent with the plan components. The projected timber sale quantity is also based on the planning unit's fiscal capability and organizational capacity. Projected timber sale quantity is neither a target nor a limitation on harvest.

The estimated quantity of timber and all other wood products expected to be sold from the plan area for the plan period is called the "projected wood sale quantity." The projected wood sale quantity consists of the projected timber sale quantity as well as other woody material such as fuelwood, firewood, or biomass also expected to be available for sale. The projected wood sale quantity includes volume from timber harvest for any purpose based on expected harvests that would be consistent with the plan components. The projected wood sale quantity is also based on the planning unit's fiscal capability and organizational capacity. The projected wood sale quantity is neither a target nor a limitation on harvest.

Although the National Forest Management Act provides that the plan period is at least every 15 years, it limits the sale of timber to less than the sustained yield limit for each decade of the plan (16 U.S.C. 1611). Providing estimates in the plan of the annual projected wood sale quantity and the annual projected timber sale quantity for the first two decades aligns with the National Forest Management Act decadal periods limiting the sale of timber, and provides estimates to cover a second decade if revision of the plan is delayed beyond the 15-year limit.

In Table A-3, timber products include volumes other than salvage or sanitation volumes that meet timber product utilization standards, while other estimated wood products include fuelwood and other volumes that do not meet timber product utilization standards.

Alternative A is generally maintaining the existing standards and guidelines; therefore, it is used as a baseline and derived from "Cut/Sold" reports (5-year average). Yields were estimated by simulating intermediate harvests (using FVS with Forest Inventory Analysis data), compliant with the alternative's goals and objectives. Volumes displayed in the previous table were derived by multiplying simulated harvest volumes per acre by the anticipated area treated shown in Table A-4. As displayed above, more volume per acre is available for removal to meet restoration objectives than is generally being removed under the existing management direction. Implementation of alternatives B, modified alternative B, and D would be expected to expand the size of projects over alternative A. Because alternative C constrains the amount and size of harvested trees, as well as incorporates the provisions of the settlement agreement for the Sierra

Nevada Forest Plan Amendment, timber production is estimated to be less while requiring higher costs in project design.

Table A-3. Planned timber sale program, decadal volume outputs in millions of cubic feet per decade by alternative, Inyo National Forest

Timber Products	Alternative A	Alternative B	Alternative B-modified	Alternative C	Alternative D
Lands suitable for timber production					
A1. Sawtimber	1	1–1.5	1–1.5	0	1.5–3
A2. Other products	2	2–3	2–3	1–1.5	3–6
Lands not suitable for timber production					
B1. Sawtimber	0	0	0	0	0
B2. Other products	1	1–1.5	1–1.5	0–0.5	1.5–3
C. Projected timber sale quantity (PTSQ) (A1+A2+B1+B2)	4	4–6	4–6	1–2	6–12
Other estimated wood products					
D. Fuelwood	3–5	3–5	3–5	3–5	3–5
E. Projected wood sale quantity (PWSQ) (C+D)	7–9	7–11	7–11	4–7	9–17

Table A-4. Acres of vegetation management practices implemented per decade, Inyo National Forest

Forestwide Vegetation Management Practices	Alternative A	Alternative B	Alternative B-modified	Alternative C	Alternative D
Thinning (intermediate harvest)	8,000	8,000–11,500	8,000–11,500	2,250–4,500	11,500–16,000
Regeneration (group selection)	1,000	1,000–2,000	1,000–2,000	0	2,000–4,000

Due to the distance between the Inyo National Forest and existing mill facilities, the vast majority of local processing of forest products is for fuelwood. As such, current and projected sawtimber opportunities are driven by the projected capability of the infrastructure. The capability of the land to provide sawtimber products to achieve desired conditions exceeds the opportunities above.

Vegetation Management Practices

Forest management on the Inyo National Forest consists of restoration and fuels reduction treatments designed to achieve desired conditions for the associated terrestrial vegetation type on suitable timber lands. Most treatments would occur in the montane zone, with minor amounts in the upper montane zone.

The projected management approach uses an uneven-aged management system. Thinning would be used to increase individual tree vigor, increase horizontal heterogeneity, and reduce fuel hazards. Group selection would be used to regenerate suitable lands, increasing vertical structure, heterogeneity and tree species diversity. More diverse silvicultural practices may be used to achieve site-specific objectives such as those related to insect and/or pathogen concerns, and meadow enhancement.

Forest management activities on lands not suitable for timber production are likely to be responsive to safety concerns or disturbance agents such as wildfire, windthrow, insect and disease, or other restoration objectives.

While only one decade is displayed in the tables immediately above, the second decade is projected to be comparable to the first decade. As the Inyo accomplishes projects already in the planning stages, and moves toward designing new projects, it is anticipated that productivity will increase. It is anticipated that the second decade will likely achieve the upper ranges of the projected treatments, as landscape-level project planning becomes more streamlined and efficiencies are developed.

Methodology

The sustainable yield is substantially higher than the current capacity of the Inyo National Forest to implement given current appropriations, as well as current regulatory and management constraints. The projected area treated in the table immediately above was established based on projected fiscal and personnel capabilities in conjunction with management objectives and limitations of each alternative.

In general, alternative A describes the existing condition under existing management direction (prior to forest plan revision efforts). Alternative B and alternative B-modified assume an increase in accomplishment by removing some of the prescriptive constraints associated with existing management direction, in favor of guiding management actions to achieve desired conditions. Alterative C is more prescriptive than alternative A and guides management actions with limits and restrictions intended to minimize changes originating from timber harvest. Like alternative B and alternative B-modified, alternative D removes many of the prescriptive constraints across all wildfire zones. Also, alternatives B, alternative B-modified, and D encourage larger, landscape-scale projects.

Based on current levels of funding and production, it is assumed that alternative A, with few changes in regulating direction, future treatments would be relatively consistent with historic treatments (based on Cut/Sold reports and Forest Activity Tracking System 5-year averages). Alternative B and alternative B-modified have the potential to treat more acres, up to 1.5 times current levels, given a focus on desired conditions, especially in wildfire protection zones. Alternative D is assumed to further expand management to achieve increased long-term ecological resilience, at the landscape scale, resulting in improved project efficiencies, leading to projects 1.5 to 2 times the current level of timber harvest. Alternative C, with an emphasis on projects that minimize mechanical treatments, such as timber harvest, by retaining and expanding prescriptive constraints, likely increases costs and reduces design flexibility. Feasible project areas are expected to be less than current production, perhaps to 0.25 to 0.5 times less due primarily to a focus on minimizing short term impacts of management on habitats for at-risk wildlife species.

Silvicultural Treatments Used to Achieve Plan Objectives

While uneven-aged management will be the primary management system used to achieve desired conditions and timber production, other silvicultural treatments may be utilized to better meet specific forest health and restoration objectives for long-term sustainability.

Reforestation

Reforestation is the act of renewing forest cover by establishing young trees. Prompt and successful reforestation is an essential phase of managed forests. This is typically accomplished by planting nursery-grown seedlings, originating from selected trees with favorable growth characteristics. The establishment of seedlings from nearby sexually-mature trees may supplement areas planted with seedlings. In some cases, seedlings originating from nearby trees may be used to meet management objectives. In the case where desired tree species are capable of sprouting (for example oaks and aspen), these sprouts commonly provide for effective reestablishment.

Site Preparation

These treatments are designed to enhance the success of regeneration efforts. A variety of methods may be used to reduce competing vegetation, planting obstacles, and fuel levels. Ground-based equipment and/or hand tools may be used to reduce tree and shrub levels, providing a more favorable environment for developing seedlings. Selective herbicides may be applied to suppress competing plants, reducing competition for soil moisture and sunlight. Fire may be used to reduce surface fuel or to consume woody material piled by machine or hand. One or more of these activities may be used to prepare sites for reestablishing seedlings.

Seedling Establishment

New forests may be established by planting seedlings or by germinating seed from nearby mature trees. Seedlings are grown in tree nurseries from selected seed sources to meet the expected demands of the future growth environment. Selected species, numbers, and arrangements are designed to provide a variety of options for the future, including the sustained production of desired forest products. Seedlings developing from seed provided by nearby mature trees vary widely in number and arrangement and commonly establish, in pulses, over time.

In managed environments, planting selected species at designed numbers and arrangements, provides advantages over the development of seedlings from nearby mature trees. Seedlings originating from nearby trees often provide numbers in excess of need and undesired arrangements. They may, however, provide for successful establishment of new forests in places regarded as difficult to plant or when planted seedling mortality levels are unacceptably high. Regardless of origin, both sources benefit from actions taken to provide more favorable growth environments.

Seedling Stocking Criteria

The stocking criteria for lands suitable for timber production are indicated in Table A-5. They are designed to provide for the attainment of the long-term desired conditions, as well as provide sufficient trees to meet the potential forest product yields over time. The values apply after regeneration harvests, as well as after disturbances, including, for example, areas affected by high-severity fire.

On lands identified as suitable for timber production, successful restocking is expected to occur within 5 years of the final harvest.

Table A-5. Stocking criteria for suitable lands by forest type

Forest Type	Region 5 Site Class*	Trees per Acre Minimum	Trees per Acre Recommended
Jeffrey pine	0-1	150	200
Jeffrey pine	2	125	200
Jeffrey pine	3	100	150
Jeffrey pine	4-5	75	125
True fir	All	200	300
Mixed conifer	All	150	200

* As defined by the Pacific Southwest Region of the Forest Service

Release

These treatments are designed to free young trees from undesirable competing vegetation. Treatments are aimed at increasing the availability of moisture, sunlight, and nutrients to planted seedlings, thus increasing the seedlings chance of survival, as well as favorable growth rates. Depending on conditions, release can be performed using hand tools, herbicides, or ground-based machines.

Precommercial Thinning

This treatment removes selected trees to reduce stocking and to promote growth and development on the more desirable trees. The removed trees are typically small and without sufficient value to cover the cost of the treatment.

Timber Harvest

The projected activities associated with scheduled suitable land forest management are geared toward uneven-aged management, a system that uses a planned sequence of treatments designed to maintain and regenerate a stand with three or more age classes. The types of treatments used are primarily thinning and group selection:

Thinning is commonly applied to lower stand density and improve the health and growth rates of the remaining trees. It may also be designed to alter tree arrangement. Trees of merchantable size are selected for removal, providing the largest portion of forest products, as estimated above. When economically feasible, trees less than merchantable size, may be removed, especially when the reduction of ladder fuels is an objective.

Thinning treatments would emphasize variable density thinning to restore heterogeneity, decrease overall forest density, decrease surface fuel continuity, and increase understory cover, density, and vigor, particularly of sun-loving plants. The approach would be similar to that described in General Technical Reports 220 and 237 (North, Stine, O'Hara, et al. 2009) and (North 2012b), emphasizing restoration of heterogeneity. Some areas would be thinned more and some areas less or not at all. Thinning could occur across a range of diameters, between small- to medium-diameter trees. Some small openings would be created while clumps of trees would be retained in some areas. There would be retention and creation of heterogeneity in the understory as well, as described in the desired conditions. Some patches of high surface fuel would occur, and other areas would have little to none.

Group selection is the projected method used to regenerate portions of forest stands. All, or most, of the trees are removed, followed by the establishment of seedlings. The size of the

opening is variable, but is designed to provide sufficient site resources for favorable seedling establishment and growth.

In addition to scheduled forest management, management actions may also respond to disturbance events (such as, wildfire, windthrow, insect, parasite or pathogen-related decline). Other harvest methods may apply to specific conditions. For example, after wildfire, especially on suitable land, salvage harvests may be implemented to recover the economic value of the dead/dying trees, as well as reduce the fuel environment that would promote the persistence of reestablishing forests. Other events, such as windthrow, insect- or pathogen-related mortality, or mistletoe infections, may lead to salvage or sanitation harvests, as well to recover economic value and improve residual stand health.

Safety considerations, although not regarded as a component of a harvest system, will likely lead to the harvest of dead/dying trees, as well as living trees that may fail, along roads and other places where people or property are threatened. This action, commonly referred to as hazard tree removal, may be used extensively along roads and trails within wildfire areas.

Definitions

Canopy closure: The percentage of the sky hemisphere obscured by vegetation when viewed from a single point.

Canopy cover: The percentage of forest floor covered by the vertical projection of the tree crowns.

Even-aged harvest: A method of regeneration of a forest with a single age class. An even-aged system consists of a planned sequence of treatments designed to maintain and regenerate a stand with predominantly one age class. The range of tree ages is usually less than 20 percent of the rotation (length in years). Treatments include clearcutting, seedtree, shelterwood, and coppice regeneration methods.

Final regeneration harvest: The final timber harvest in a sequence of harvests designed to regenerate a timber stand or release a regenerated stand. A final regeneration harvest could be a clearcut, removal cut of a shelterwood or seedtree system, or a selection cut.

Forest land: Land that is at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for nonforest uses. Land developed for nonforest use includes areas for agricultural crops, improved pasture, residential or administrative areas, roads of any width and adjoining road clearing, and powerline clearing of any width (36 CFR 219.19).

Fuelwood: Wood used for conversion to some form of energy.

Group selection: This is the anticipated regeneration method to be used. Groups of trees are removed and seedlings are established within areas that may range up to 3 acres.

Growing stock: All trees growing in a forest or in a specified part of it, usually commercial species, meeting specified standards of size, quality, and vigor, and generally expressed in terms of trees per acre, density, or volume.

Hazard tree removal: The abatement of tree hazards, generally near roads, trails, and facilities. Tree hazards include dead or dying trees, dead parts of live trees, or unstable live trees (due to

structural defects or other factors) that are within striking distance of people or property (a target). Hazard trees have the potential to cause property damage, personal injury or fatality in the event of a failure.

Integrated resources service contract (IRSC): A stewardship contract where the cost of services or construction exceeds the value of the goods (usually timber product removal). The IRSC may trade goods for services, use appropriated funds, and/or use retained receipts from another stewardship contracting project to pay for service work. Each IRSC includes mandatory restoration work items and may include optional restoration work items, which may be added at the government's option.

Integrated resources timber contract (IRTC): A stewardship contract where the value of goods (usually timber product removal) exceeds the cost of services. Each IRTC includes mandatory restoration work items and may include optional restoration work items. Funds received for product removal in excess of service work are retained by the Forest as retained receipts to be used to accomplish restoration work in designated stewardship areas.

Management practices (Vegetation management practices): Silvicultural practices such as reforestation, prescribed fire, thinning to reduce stand density, and other practices designed to facilitate growth and development of trees.

Management intensities: The set and schedule of management practices typically used for certain forest or timber types to achieve desired conditions that may include timber production.

Mean annual increment of growth and culmination of mean annual increment of growth: The mean annual increment of growth is the total increment of increase of volume of a stand (standing crop plus thinnings) up to a given age divided by that age. The culmination of mean annual increment of growth is the age in the growth cycle of an even-aged stand at which the average annual rate of increase of volume is at a maximum. In land management plans, the mean annual increment of growth is expressed in cubic measure and is based on the expected growth of stands according to intensities and utilization guidelines in the plan (36 CFR 219.19).

Mechanical thinning: The thinning of trees in even- and uneven-aged stands involving removal of trees in rows, strips, or set spacing intervals. Mechanical in this sense does not necessarily indicate the use of machinery, but rather the set way in which the thinning is implemented.

Nonforest land: Lands that do not meet the definition of forest land.

Reasonable assurance: A judgment made by the responsible official based on best available scientific information and local professional experience that practices based on existing technology and knowledge are likely to deliver the intended results. Reasonable assurance applies to average and foreseeable conditions for the area and does not constitute a guarantee to achieve the intended results.

Restocked: The condition of the growing space occupancy of trees to be achieved after a disturbance that has substantially altered the existing stocking.

Rotation: The number of years (including the regeneration period) required to establish and grow timber under an even-aged management system to a specified condition or maturity for regeneration harvest.

Salvage cutting: The removal of damaged, dying, or dead trees after injury for outside forces or disturbance. Injury could be caused by wildfire, disease, insects, weather events or other agents. Salvage is conducted to recover economic value that otherwise would be lost, remove trees that present a safety hazard to people, property, or wildlife, reduce available fuels, or other noneconomic purposes. Reforestation after salvage is usually by artificial regeneration.

Sanitation cutting: The removal of individual trees which have suffered or likely to suffer disease or insect attack, to reduce the actual or anticipated spread of the disease or insects, and to recover potential mortality.

Single tree selection: Individual trees of all size classes are removed more or less uniformly throughout the stand to promote growth of remaining trees and provide small spaces for regeneration.

Special forest products: Products or natural resources that are not the traditional timber and wood products. Examples include such products as moss, Christmas trees and boughs, mushrooms, transplants (trees, shrubs or herbaceous plants), cones, medicinal plants, seeds, nuts, berries, and decorative wood.

Stand: A contiguous group of trees sufficiently uniform in age class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit, such as mixed, pure, even-aged, and uneven-aged stands.

Timber production: The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use (36 CFR 219.19).

Two-aged system: A planned sequence of treatments designed to regenerate or maintain a timber stand with two age classes. A two-aged system is a form of even-aged management.

Uneven-aged management system: A system which is implemented to regenerate and maintain a multi-aged forest structure by removing some trees of all age classes and, at the same time, creating microsites for the establishment of seedlings. An uneven-aged system is a planned sequence of treatments designed to regenerate or maintain a timber stand with three or more age classes. Treatments include single-tree selection and group selection regeneration methods.

Utilization standards: Utilization standards are specifications for merchantable forest products offered in a timber sale.

Variable retention: An approach to harvesting based on the retention of structural elements or biological legacies (trees, snags, and logs) from the harvested stand for integration into the new stand to achieve various ecological objectives—note the major variables in the variable retention harvest system are types, densities, and spatial arrangement of retained structures; aggregated retention is the retention of structures or biological legacies as (typically) small, intact forest patches within the harvest unit; dispersed retention is the retention of structures or biological legacies in a dispersed or uniform pattern.

Appendix B – Wilderness Evaluation for the Inyo National Forest

Introduction

Relationship to the Forest Plan Revision Process

The Inyo National Forest is required as part of the land management plan revision process to "identify and evaluate lands that may be suitable for inclusion in the National Wilderness Preservation System, and determine whether to recommend any such lands for wilderness designation" (Title 36, Code of Federal Regulations, Part 219.7(v)).

The process used to identify and evaluate lands is found in the Forest Service Land Management Planning Handbook FSH 1909.12-2015-1, Chapter 70 – Wilderness (Wilderness Recommendation Handbook). The Wilderness Recommendation Handbook contains Forest Service guidance and instruction on how to carry out the direction contained in 36 CFR Section 219.7(v). It includes the November 15, 2013 Federal Advisory Committee recommendations on the chapter 70 wilderness inventory and evaluation process.

The process occurs in four primary steps: inventory, evaluation, analysis, and recommendation. Each step requires public participation. The inventory step identifies all lands in the plan area that may have wilderness characteristics as defined in the Wilderness Act. This step is intended to be reasonably broad and inclusive. The evaluation step evaluates the wilderness characteristics of lands in the inventory. The inventory and evaluation steps use criteria set out in the Wilderness Recommendation Handbook and are further described below. In the analysis step, the Forest Supervisor considers the areas evaluated and determines which areas to further analyze for potential recommendation as part of one or more alternatives analyzed in the environmental impact statement for the revised plans. Not all lands included in the inventory and subsequent evaluations are required to be analyzed as potential recommended wilderness. Based on the analysis and input from Tribal, State, and local governments and the public, the Forest Supervisor decides which areas, if any, to recommend for inclusion in the National Wilderness Preservation System. The Forest Supervisor will document this decision in the final decision document for Inyo National Forest Revised Land Management Plan.

Inventory

Process Used to Inventory Areas that may be Suitable for Inclusion in the National Wilderness Preservation System

The wilderness inventory process includes: (a) the preparation of a preliminary inventory map; (b) public input on the preliminary inventory map; and (c) preparation of a final inventory map that incorporates public input and corrects mapping errors.

Preliminary Inventory Map

We created a preliminary inventory map of undeveloped areas that may have wilderness characteristics using the three sets of criteria identified in the Wilderness Recommendation Handbook (roads improvements, other improvements, and minimum size). During that process we completed the following:

1. We identified all lands that met the roads improvements criteria, as outlined in Chapter 70, 71.22(a). Roads improvements data were developed through the travel management planning process. The objective maintenance level of each road was used. The Forest Service analysis of roads improvements incorporated the travel management decisions on the Inyo National Forest. The undeveloped areas on the preliminary inventory map were unroaded, contained decommissioned or unauthorized routes, or contained objective maintenance level 1 roads. Motorized trails were included in the preliminary inventory because they met the Wilderness Recommendation Handbook's definition of unroaded.
2. We excluded lands that met the roads improvements criteria but had less than half a mile across between roads. These areas are not of sufficient size to make practicable their preservation and use in an unimpaired condition.
3. We excluded lands that met the roads improvements criteria but had "power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structures," as outlined in chapter 70, 71.22(b)(9). The Wilderness Recommendation Handbook allows areas with other types of improvements, such as timber harvest areas, historic mining areas or range improvements, to be included in the inventory as long as they are not substantially noticeable.
4. We created a draft preliminary inventory map based on the above steps, identifying polygons in the following categories:
    a. Areas 5,000 acres or greater.
    b. Areas less than 5,000 acres and noncontiguous to existing designated wilderness, primitive areas, or recommended wilderness on both National Forest System lands and adjacent lands of other Federal ownership.
    c. Areas between 1,000 and 4,999 acres and contiguous to existing designated wilderness, primitive areas, or recommended wilderness on National Forest System lands and on lands of other Federal ownership.
    d. Areas less than 1,000 acres and contiguous to existing designated wilderness, primitive areas, or recommended wilderness on National Forest System lands and on lands of other Federal ownership.
5. We included all areas 5,000 acres or greater (chapter 70, 71.21(1)).
6. We included areas between 1,000 and 4,999 acres and contiguous to existing designated wilderness, primitive areas, or recommended wilderness on National Forest System lands and on lands of other Federal ownership (chapter 70, 71.21 (3)).
7. We reviewed areas less than 5,000 acres and noncontiguous to existing designated wilderness, primitive areas, or recommended wilderness on National Forest System lands and lands of other Federal ownership. All these areas were excluded because the forests determined during their reviews that they were not of sufficient size to make practicable their preservation and use in an unimpaired condition (chapter 70, 71.21(3)).
8. We reviewed areas less than 1,000 acres and contiguous to existing designated wilderness, primitive areas, or recommended wilderness on National Forest System lands and on lands of other Federal ownership. Most of these areas were very small and oddly shaped and had been purposefully excluded from previous Congressional

wilderness designations. These areas were excluded unless we determined that they were practicable additions in shape and size.

9. We excluded improvements in the polygons that did not meet the criteria in chapter 70, 71.22(b).
10. We updated preliminary inventory maps based on the above steps.

The preliminary inventory maps of lands that may be suitable for inclusion in the National Wilderness Preservation System can be viewed or downloaded at the following websites:

- Inyo National Forest (North): http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3804531.jpg
- Inyo National Forest (South): http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3804526.jpg

The maps display two categories of areas that are part of the preliminary inventory: (1) Preliminary inventory, greater than 5,000 acres, and (2) Preliminary inventory, 1,000-5,000 acres, contiguous. These areas represent undeveloped lands that may have wilderness characteristics because they meet the size criteria, improvements criteria, and roads improvements criteria. The maps also display two categories of areas that were considered, but eventually excluded from the preliminary inventory as described in the steps above.

Table B-1 displays the total acres on each forest that were considered for inclusion in the inventory, the total acres on each forest that did not meet the wilderness inventory criteria, and the total acres on each forest that met the wilderness inventory criteria.

Table B-1. Preliminary wilderness inventory acres for the Inyo National Forest

National Forest	Total undeveloped acres considered in wilderness inventory	Acres that do not meet wilderness inventory criteria	Acres that meet wilderness inventory criteria
Inyo	791,409	192,855	508,544

Public Input on the Preliminary Inventory Map

The Forest Service posted the preliminary inventory map (map version 3.1, dated June 4, 2014) to the Pacific Southwest Region's planning website on June 4, 2014 (http://www.fs.usda.gov/detail/r5/landmanagement/planning/?cid=STELPRD3803608). During a public workshop and Tribal forum held in mid-June, the preliminary inventory maps were introduced, and the public was invited to provide input on the maps through June 30, 2014. The tools used to inform the public about the upcoming workshops included news releases to individuals and the media, emails to parties on the schedule of proposed actions database list, radio spots, and the Pacific Southwest Region's planning website. The public input primarily focused on whether roads existed on some of the undeveloped lands on the Inyo National Forest.

Public input also included a comprehensive citizen-developed inventory of areas that may be suitable for inclusion in the National Wilderness Preservation System. The citizen inventory included a total of 456,157 acres on the Inyo National Forest.

Final Inventory Map

The final inventory maps (map version 4.1, dated August 29, 2014) incorporated the following adjustments after reviewing the citizen-developed inventory and other public input:

- We fixed cartographic reference layers on the maps that had errors.
- We enlarged one undeveloped area.
- We carefully reviewed the citizen-developed inventory. Of the 456,159 total acres in the citizen inventory within the Inyo National Forest administrative boundary, 440,446 acres were consistent with what we had identified in the inventory. The areas that were not consistent with our inventory were not included in the final inventory because they did not meet the inventory criteria. Ultimately, we included 97 percent of the citizen inventory in the final inventory for the Inyo National Forest.

The final inventory maps of lands that may be suitable for inclusion in the National Wilderness Preservation System can be viewed or downloaded at the following websites:

- Inyo National Forest (North): http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3815404.pdf
- Inyo National Forest (South): http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3815405.pdf

The maps display two categories of areas that are part of the final inventory: (1) Final inventory, greater than 5,000 acres, and (2) final inventory, 1,000-5,000 acres, contiguous. These areas represent undeveloped lands that may have wilderness characteristics because they meet the size criteria, improvements criteria, and roads improvements criteria. The maps also display two categories of areas that were considered, but eventually excluded from the inventory as described in the preliminary inventory steps above.

Table B-2 displays the revised total acres on the Inyo National Forest that were considered for inclusion in the inventory, the revised total acres that did not meet the wilderness inventory criteria, and the revised total acres that met the wilderness inventory criteria.

Table B-2. Final wilderness inventory acres for the Inyo National Forest

National Forest	Total undeveloped acres analyzed for wilderness inventory criteria	Acres that do not meet wilderness inventory criteria	Acres that meet wilderness inventory criteria*
Inyo	795,190	180,674	614,516

The acres listed here represent the final inventory dataset. The final inventory dataset and the dataset used for the evaluation (see Evaluation section) are the same except for some small corrections that were made in the evaluation dataset after the final inventory was completed. For this reason, there are some small discrepancies between the polygon acreage totals shown here and those calculated for the evaluation dataset.

Wilderness Inventory Results

There are 78 wilderness inventory areas (totaling 614,516 acres) that meet the wilderness inventory criteria for minimum size, improvements, or roads improvements. Fifty-three wilderness inventory areas are larger than 5,000 acres in size. Twenty-five wilderness inventory areas are between 1,000 and 5,000 acres in size and adjacent to designated wilderness.

The 180,674 acres that do not meet the wilderness inventory criteria comprise three categories of area: (a) 321 areas that are less than 1,000 acres and not contiguous to designated wilderness; (b)

39 areas that are between 1,000 and 5,000 acres; and (c) 126 areas that are less than 1,000 acres and contiguous with designated wilderness.

After the draft environmental impact statement was released, we discovered a GIS mapping error in the final inventory map that resulted in approximately 4,000 acres of lands the Inyo administers for the Humboldt-Toiyabe missing from the inventory. Once we realized the omission, we re-ran the inventory script for this 4,000 acre parcel. This resulted in an addition to the wilderness area that merged two former polygons (1350 and 1351) into one polygon large enough to bring forward to the evaluation. We designated it as polygon 1550. We completed an evaluation per the directives (a motorized trails evaluation and a built features evaluation) on 1550 and the polygon was updated accordingly. See Figure B-1 for update.

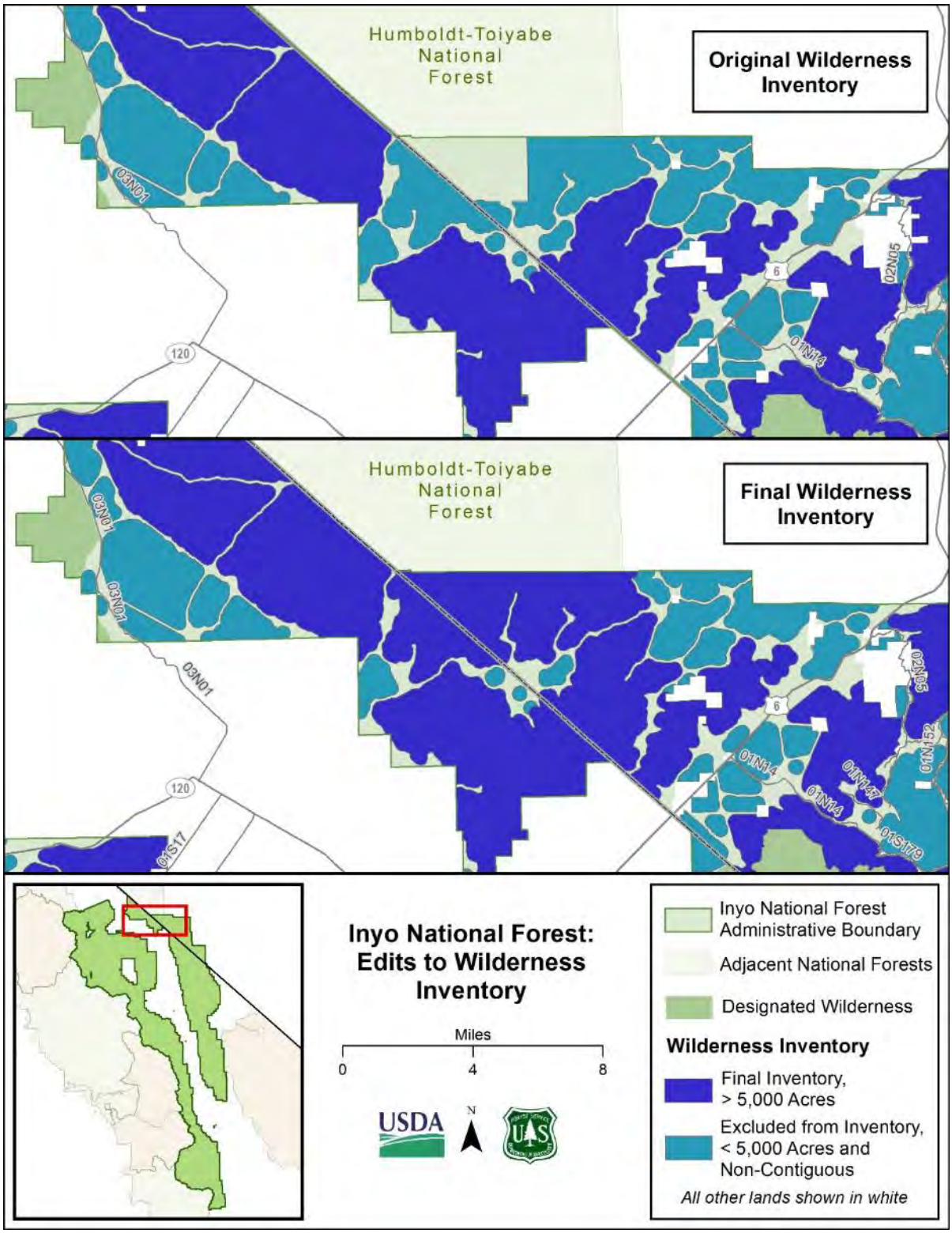


Figure B-1 Updates to wilderness inventory merging polygons 1350 and 1351 into polygon 1550, a 4,000-acre parcel

Evaluation

Process Used to Evaluate Areas that may be Suitable for Inclusion in the National Wilderness Preservation System

The primary function of the evaluation step is to evaluate the wilderness characteristics of the lands included in the final inventory, using criteria set forth in the Wilderness Act of 1964 as described in the Wilderness Recommendation Handbook (FSH 1909.12, chapter 70, section 72).

Creation of an Evaluation Dataset and Map Based on the Final Inventory

The first step of the evaluation phase was to create a clean dataset with which to begin the evaluations. The evaluation map and dataset include all the areas that met the inventory criteria in the final inventory and exclude the areas considered, but eliminated from the final inventory.

Consideration of Motorized Trails

We examined the evaluation polygons to determine whether wilderness characteristics were affected by authorized motorized trails. Motorized trails were authorized as part of the Inyo National Forest transportation system through recent travel management decisions.

The following process was used to examine motorized trails. We:

1. Mapped designated motorized trails on top of the final inventory polygons.
2. Created subpolygons within the final inventory polygons to separate areas containing authorized motorized trails from the rest of the polygon.
3. Evaluated subpolygons with authorized motorized trails to determine the impact of those trails on wilderness characteristics, considering:
    a. The prevalence of motorized trails.
    b. The level of commitment to these trails.

Based on this process, we found that the wilderness characteristics of approximately 99,332 acres across the Inyo National Forest were affected by authorized motorized trails. The final inventory maps with the identified areas affected by motorized trails were posted online for public review and input between September 5, 2014 and September 24, 2014. See a more detailed discussion on public input below.

Evaluation of Wilderness Characteristics

Our interdisciplinary team evaluated the final inventory polygons to determine potential suitability for inclusion in the National Wilderness Preservation System. We considered the following criteria, based on direction found in the Wilderness Recommendation Handbook:

1. The degree to which the area generally appears to be affected primarily by the forces of nature, considering factors such as:
    a. Whether the composition of plant and animal communities appears natural (e.g., past management activities have created a plantation-style forest with trees of a uniform specie and age and planted in rows).
        i. Extent to which the area appears to reflect ecological conditions that would normally be associated with the area without human intervention.

ii. Extent to which improvements included in the area represent a departure from apparent naturalness.

2. The degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation. The word "or" means that an area only has to possess one or the other. The area does not have to possess outstanding opportunities for both elements, nor does it need to have outstanding opportunities on every acre. Considerations include:
    a. Impacts that are pervasive and influence a visitor's opportunity for solitude within the evaluated area. Factors to consider may include topography, presence of screening, distance from impacts, degree of permanent intrusions, and pervasive sights and sounds from outside the area.
    b. The opportunity to engage in primitive and unconfined type of recreation. Factors may include the degree of challenge or risk while using outdoor skills.
3. The degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historical value. These values are not required to be present in an area, but their presence should be identified and evaluated where they exist.
4. The degree to which the area may be managed to preserve its wilderness characteristics.
    a. Shape and configuration of the area.
    b. Legally established rights or uses within the area.
    c. Specific Federal or State laws that may be relevant to the availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics.
    d. The presence and amount of non-Federal land in the area.
    e. Management of adjacent lands.

Maps of the final inventory polygons along with their evaluation narratives can be found below.

Public Input on the Evaluation

Public input was gathered in a number of ways throughout the process and was considered in the development of the evaluation narratives. There will be further opportunities for the public to provide input on the evaluation narratives during the public comment period after the draft environmental impact statement is released.

In September 2014, we notified the public that the final inventory maps were available on the "Talking Points" website at https://my.usgs.gov/ppgis/studio/launch/16850 and we asked them to provide any information to help document the wilderness characteristics of the final inventory polygons. These maps also identified areas within final inventory polygons where wilderness character was affected by authorized motorized trails. Stakeholders provided information via this website through general written comments and also by highlighting specific points or areas on the map and attaching comments specific to those areas.

In addition, we received comments regarding the wilderness evaluation through the project website, email, and postal mail during the scoping period. The wilderness evaluation process and

final inventory maps were also part of the public workshops and tribal forums held on the Inyo National Forest in September 2014.

From June to November 2015, we received and reviewed additional public input on the initially selected areas for analysis as recommended wilderness (see "Analysis" section), as well as the evaluation process. As a result, we further refined the evaluation narratives to include any new, relevant information; to improve consistency and clarity in the evaluation narratives; and to add more detail regarding wilderness characteristics in the evaluation narratives.

In December 2015, we provided the public an opportunity to review and provide feedback on the draft wilderness evaluation narratives prior to the completion of the draft environmental impact statement. This resulted in further adjustments to the wilderness evaluation narratives. For more information on feedback received, see the "Analysis" section below.

Summary of Public Input

Several stakeholders were under the impression that the final wilderness inventory maps represented our recommendations for additional designated wilderness. In addition, there was a perception that the "Talking Points" map did not display all existing roads or other developments. These perceptions had a noticeable influence on the input received.

Public input generally fell into the following categories:

1. Views on recommending additional wilderness areas.
    a. Stakeholders opposed to recommending additional wilderness areas generally cited the lack of wilderness characteristics in areas with motorized trails, mountain bike trails, or other improvements.
    b. Stakeholders in favor of recommending additional wilderness areas generally cited an area's natural qualities, opportunities for primitive recreation, or other features of value.
2. Wilderness inventory and evaluation process.
    a. The motorized recreation community expressed concern that the evaluation process would override and nullify decisions on the national forest transportation system made through the recent travel management process.
    b. Wilderness advocacy organizations wanted to see an assessment of whether the areas in the final inventory contained underrepresented ecosystems in the National Wilderness Preservation System.
    c. Some stakeholders were concerned about excluding the areas with motorized trails identified on the "Talking Points" map from being evaluated for wilderness characteristics.
    d. Some stakeholders wanted to see a broader evaluation process, ranging from being more inclusive of all roadless areas to reconsidering designated wilderness boundaries.
3. Impacts or management issues from additional wilderness designations. There were:
    a. Concerns with the agency's ability to manage additional wilderness.
    b. Concerns that additional wilderness would reduce the amount of California state off-highway vehicle grants coming to the forests and reduce the off-highway

vehicle community's volunteer and financial contributions to maintaining motorized trails.

c. Concerns that additional wilderness would limit areas on the forest open to multiple-use recreation and would harm the tourism economies of gateway communities.

d. Concerns that additional wilderness would limit a forest's ability to conduct fuels treatments or fire suppression activities, especially adjacent to communities or private lands.

e. Concerns that additional wilderness would affect the ability of people who are disable or elderly to access the national forests.

f. Concerns about restrictions on livestock grazing.

How Public Input was Incorporated

Motorized Trails

Some of the input we received on motorized trails resulted from viewers not being able to see them on the "Talking Points" map. The visibility of motorized trails on this map is scale dependent and requires viewers to zoom in to a certain level before being able to see the motorized trails.

The presence of authorized motorized trails in an inventory area is not by itself a sufficient basis for not conducting an evaluation of the area. The evaluation narrative for each inventory area contains a summary of the motorized trails within the area and describes the effects those trails have on the wilderness characteristics and manageability of the area.

Wilderness Characteristics

Any new, relevant information regarding the wilderness characteristics of a specific area was validated and then incorporated into the evaluation narrative.

Recommending Additional Areas

Public feedback regarding which polygons to recommend or not was reviewed, categorized, and summarized. The Forest Supervisor then considered this information in deciding which areas or portions of areas to carry forward as recommended wilderness in one or more alternatives in the draft environmental impact statement.

Underrepresented Ecosystem Types

The Wilderness Society submitted substantial and detailed information regarding ecosystem representation, including several tables and maps. We reviewed and synthesized this information and included summaries in the wilderness evaluation narratives.

Broadness of the Evaluation Process

The Forest Service's wilderness evaluation process is intended to be transparent and consistent for all national forests across the country. All national forests follow the guidance set forth in the Wilderness Recommendation Handbook.

Management of Recommended Wilderness

The revised forest plan provides management direction for any recommended wilderness. When developing plan components for recommended wilderness areas, the Forest Supervisor has

discretion to implement a range of management options. If any areas are recommended for wilderness through a revised forest plan, the forest is required "to protect and maintain the ecological and social characteristics that provide the basis for their suitability for wilderness designation" (36 CFR 219.11).

Other Factors and Management Issues

Many of the additional concerns raised by the public are not applicable to the evaluation of wilderness characteristics. However, they are considered by Forest Supervisors during the analysis phase.

Explanatory Notes on Roads and Motorized Trails

Roads

A forest road is a road wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources (36 CFR 212.1). In several instances, reference is made to "level 1 roads" or "level 2 roads" on National Forest System land. This refers to the level of service provided by, and maintenance required for, a specific road (FSH 7709.59, Ch. 60, sec. 62.3). The following explanation of those maintenance levels is taken from Forest Service Handbook, 1909.12, Chapter 12, Wilderness:

1. Level 1 roads are roads that have been placed in storage between intermittent uses. The period of storage must exceed 1 year. Basic custodial maintenance is performed to prevent damage to adjacent resources and to perpetuate the road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are to "prohibit" and "eliminate" all traffic. These roads are not shown on motor vehicle use maps.

   Roads receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are closed to vehicular traffic but may be available and suitable for non-motorized uses.

2. Level 2 roads are open for use by high-clearance vehicles. Passenger car traffic, user comfort, and user convenience are not considerations. Warning signs and traffic control devices are not provided with the exception that some signing, such as W-18-1 "No Traffic Signs," may be posted at intersections. Motorists should have no expectations of being alerted to potential hazards while driving these roads. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log-haul may occur at this level. Appropriate traffic management strategies are either to "discourage" or "prohibit" passenger cars. "Accept" or "discourage" strategies may be employed for high clearance vehicles.

Cherry Stem Roads

Throughout the descriptions of polygons, there are references to cherry stem roads. A cherry stem road refers to a dead-end road that appears to protrude into a polygon, but the perimeter of the polygon is drawn around the road, excluding the road from being within the actual boundary of a polygon. The setback to cherry stem these roads was established at 200 feet from the centerline

on either side of the road. This buffer was used on all authorized roads that were adjacent, or within evaluated polygons.

Authorized Motorized Trails or Authorized Forest System Roads

Throughout the descriptions of polygons, there are references to authorized motorized trails or authorized forest system roads. These were designated by Travel Management Record of Decisions.

Wilderness Inventory Evaluations

Evaluation narratives are provided first, followed by a series of maps for the Inyo National Forest. The map section includes an index map (Figure B-2). The appropriate sectional maps are referenced in each polygon narrative.

Evaluation Narratives

Polygon 944 (Watterson Canyon)

General Description

Polygon 944 (Watterson Canyon) is located east of Crowley Lake and north of the Benton Crossing Road and Watterson Canyon (Figure B-6, Inyo National Forest evaluation map D). It consists of 7,629 acres, ranging in elevation from 7,000-7,600 feet. The polygon is elongated (horizontal) and bisected by motorized trail.

National Vegetation Classification System data indicates 61 percent of the area of the polygon (4,635 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent groups are inter-mountain basins big sagebrush shrubland and inter-mountain basin montane sagebrush steppe. An additional 2,970 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its total national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The ecosystem types include sagebrush, pinyon-juniper and Jeffrey pine. It is within the Benton-Casa Diablo Place, which is described as broad volcanic tableland punctuated by mountain peaks of the Benton mountain range. The polygon includes broad, open sandy canyons with minimal vegetation cover, and shrublands and pinyon woodlands. It includes Watterson Inventoried Roadless Area and a sage grouse priority habitat.

Soils are likely in desired condition, except for site-specific localized effects. Air quality is excellent. Riparian vegetation may be present in canyons. There are no perennial or intermittent stream channels present. There are no meadows. There is a departure from apparent naturalness due to the presence and expansion of cheatgrass, an invasive plant species. Extensive past and current grazing has occurred in the area; the area is currently grazed by sheep. The area is largely unsurveyed for cultural resources, but there are documented cultural sites that include prehistoric lithic scatters, rock rings and milling features.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography is highly variable, but generally includes broad, open sandy canyons with minimal vegetation cover, providing little screening. A motorized trail nearly bisects the area, and

the Benton Crossing Road (a moderate use paved road) is located along the southern and eastern boundary. There is a power line along the northern boundary that may be visible from the area. The potential for encounters with other users is low and mostly concentrated on the motorized trail and roads around perimeter. There is limited opportunity for solitude or primitive and unconfined recreation due to the proximity of the road and motorized trail system. The area is largely undeveloped and there is likely opportunity for primitive and unconfined recreation, such as cross-country hiking and general forest exploration.

Other Features of Value

This is a sage grouse priority habitat.

Manageability

There is one motorized trail that runs north to south, splitting the polygon nearly in half. The area is surrounded by roads, including Benton Crossing Road (a moderately traveled, high speed paved road on the south and east), lightly traveled dirt roads (including a power line on the north), and a motorized trail through the center. The polygon occurs within priority habitat for sage grouse which may require habitat restoration activities.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This area is undeveloped. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 4,635 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 2,790 acres. The opportunity for solitude or primitive and unconfined recreation is degraded due to the motorized trail system that runs through the middle of the area, and the high speed paved Benton Crossing Road along the south and east boundaries. The proximity to roads and motorized trails would make it difficult to manage for wilderness characteristics. The location of the roads, motorized trails, power lines and forest boundary do not allow the polygon to be reshaped in a way that would make it more manageable. There is a departure from apparent naturalness due to the presence and expansion of cheatgrass, an invasive plant species. The area occurs within priority habitat for sage grouse, where habitat restoration activities may be desired.

Polygon 995 (Kelty Canyon)

General Description

Polygon 995 is located in the Glass Mountains, Kelty Canyon area west of Benton Crossing Road (Figure B-4, Inyo National Forest evaluation map B). It consists of 5,806 acres, ranging in elevation from 6,800 to 8,800 feet. The polygon is somewhat elongated, north to south.

National Vegetation Classification System data indicates 35 percent of the polygon (2,056 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent group is inter-mountain basins montane sagebrush steppe. An additional 3,639 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include mountain mahogany and pinyon-juniper. Roads (including Benton Crossing Road) and the forest boundary (private land in Frazier Canyon and Bureau of Land Management) surround the area. It is within the Benton-Casa Diablo Place, described as broad volcanic tableland punctuated by mountain peaks of the Benton mountain range. The polygon includes broad, open sandy canyons with minimal vegetation cover, and shrublands and pinyon woodlands ecosystem types. The majority of the area intersects Glass Mountain Inventoried Roadless Area.

The area provides some contiguous habitat for wildlife. There have been limited management activities in this area. Air quality is excellent. The condition of meadow and riparian areas is unknown. Riparian vegetation is present in canyons throughout this area in unknown condition; a mapped meadow is present in Kelty Canyon. Pinyon pine expansion is occurring, which could indicate a departure from natural fire regime due to fire suppression. There are few invasive plant species. Grazing occurs in the area and is evident; it is likely there are localized legacy grazing impacts.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography is highly variable, but generally includes moderate, open slopes and broad canyons. Topography and vegetation provide some screening. The distance from impacts and developments varies, including authorized forest system roads along the south and west perimeter, a few cherry stemmed roads, a moderately used paved road along the east boundary, an extensive network of authorized motorized trails to the west, and Highway 120 is 2 miles to the northeast. Sights and sounds from paved and forest system roads and motorized trails would likely penetrate throughout the polygon and limit opportunities for solitude. The area is largely undeveloped and there are likely opportunities for primitive-type recreation activities such as cross-country hiking and general forest exploration.

Other Features of Value

None were noted.

Manageability

The polygon is elongated and narrow, north to south, no more than 3 miles across. It is bordered by forest roads, Benton Crossing Road, and the straight-line forest boundary with other Federal land and private lands.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area does provide contiguous habitat for wildlife. Air quality is excellent. The opportunity for solitude is limited due to the proximity to roads and motorized trails; sights and sounds would likely penetrate throughout the polygon and limit opportunities for solitude. There are opportunities for primitive and unconfined recreation. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 2,056 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 3,635 acres. There is not the potential to reshape the polygon.

Polygon 1012 (Glass Mountains)

General Description

Polygon 1012 (Glass Mountains) consists of 40,368 acres ranging in elevation from 7,000 to over 11,000 feet and is located in the Glass Mountains (Figure B-6, Inyo National Forest evaluation map D). This area includes Glass Mountain at 11,123 feet in elevation.

National Vegetation Classification System data indicates thirty two percent of the polygon (13,003 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. Two of the groups, inter-mountain basins big sagebrush shrubland and inter-mountain basins montane sagebrush steppe, have substantial acreage in this polygon. An additional 17,288 acres are comprised of Great Basin pinyon-juniper woodland and rocky mountain aspen forest and woodland, which have less than 15 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The polygon includes moderate to steep open slopes and ridges, cresting at Glass Mountain on the eastern side. There are gentler slopes in Jeffrey pine forest on the western side. The area includes views to Crowley Basin and the Sierra Nevada. The majority of Glass Mountain area is mid-elevation forests (Jeffrey pine and mixed-conifer forests) with some high forests (subalpine, such as whitebark pine) along the southern end, and pinyon woodlands in the foothills. Numerous perennial channels are present (O'Harrel Creek, Wilfred Creek, McGee Canyon), as well as numerous intermittent channels. Air quality is excellent. This polygon intersects with Glass Mountain Inventoried Roadless Area; Indiana Summit Research Natural Area and Sentinel Meadow Research Natural Area. Several public comments indicated the area is an important wildlife migration corridor. The polygon contains sage grouse restoration habitat, including priority habitat.

There is a departure from natural conditions due to the presence and increase in cheatgrass. Native fish and fishless areas were stocked with non-native trout species, which has affected aquatic ecologic integrity. Exotic fish species have displaced the small minnow species in area streams and ponds. There have been legacy impacts to soils and riparian areas from grazing, logging, and dispersed camping; however, these impacts are mostly site-specific and not widespread. There are some watershed restoration activities, including head cut stabilization within several meadow and spring systems, including McGee Meadow and Sawmill Meadow. The area also includes aspen restoration.

There is a communication site at the top of Glass Mountain that is accessed via helicopter. Both sheep and cattle grazing takes place in this area; there are fences, spring boxes and troughs associated with grazing allotments and there may be a water diversion to Alpers and Arcularias Ranch. McGee Meadow and Sawmill Meadow have headcut structures that are not substantially visible. Headcut and fencing treatments exist around springs in the southwest portion of the polygon.

Opportunities for Solitude or Primitive and Unconfined Recreation

This large polygon is bordered by an extensive road and motorized trail system that is popular for dispersed recreation. Many authorized forest system roads shape the polygon with a lot of narrow appendages, including an elongated and narrow one on the west side. On the eastside of the

polygon, an authorized motorized trail runs north to south through the polygon, limiting opportunity for solitude in this area. There is some screening due to topography and vegetation.

Several management activities have occurred or are occurring, including historic logging, multiple grazing allotments, woodcutting, outfitting and guiding, dispersed camping and hunting. The distances from impacts vary greatly, but generally are up to 3 miles from nearest road or trail system from the interior of the polygon. There are likely areas within the polygon that are free from motorized noise. The area receives low to moderate amounts of recreation use. There is some over snow vehicle use on the east side. There are opportunities for primitive and unconfined recreation in the interior portion of the polygon, which is largely undeveloped and likely provides primitive-type recreation opportunities including cross-country hiking, hunting and general forest exploration and some degree of challenge due to remoteness and steep terrain.

Other Features of Value

Prehistoric use here was significant with a very large number of documented prehistoric sites, including lithic scatters, lithic isolates and piagi collection trenches. The Glass Mountains were an important obsidian source. Piagi trenches may be maintained by contemporary Indians.

The polygon includes sensitive plant species including Mono Lake lupine, Raven's milkvetch and Mono milkvetch. Unique, diverse conifer communities occur here, including whitebark, limber and lodgepole pine. Blister rust resistant white bark pines are in the highest elevation core of the Glass Mountains. The area is a sage grouse priority habitat and contains northern goshawk breeding areas. There are Lahontan cutthroat trout in O'Harrel Creek. There is exceptional geology, including obsidian and pumice.

Manageability

This polygon intersects with Glass Mountain Inventoried Roadless Area; Indiana Summit Research Natural Area and Sentinel Meadow Research Natural Area; and priority sage grouse habitat. The area is surrounded by an extensive forest system road and motorized trail system that provides access for management activities and is popular for dispersed recreation. In some areas, the polygon is irregularly shaped, particularly the western portion of the polygon in the vicinity of Indiana Summit Research Natural Area and Bald Mountain Springs, and west of McGlaughlin Creek (elongated and narrow). The eastern portion of the polygon has an extensive network of motorized trails within the border of the polygon. There is also one motorized trail in the southwest portion of the polygon. Both sage grouse and Lahontan cutthroat trout habitat areas may require management activities under the Endangered Species Act. There are three water rights in the area. There is outfitting and guiding under special use authorizations occurring in the area. There is one private land inholding (40 acres west of Wilfred Canyon). The communication site on top of Glass Mountain is a highly developed, permanent facility that is accessed by helicopter. Public comments indicate there are trails used by mountain bikers in the area.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are opportunities for solitude or primitive and unconfined recreation within the interior portion of the polygon. Some portions of the polygon have authorized motorized trails within the boundary that would limit opportunities for solitude or primitive and unconfined recreation, which would also occur near some of the perimeter areas that are surrounded by an extensive network of forest system roads.

Impacts to soils and riparian areas are localized and not widespread. Air quality is excellent. Activities associated with managing sage grouse habitat, Lahontan cutthroat trout, meadow and aspen occur in this polygon. The communication site on top of Glass Mountain is visible from much of the area is accessed via helicopter. This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 13,003 acres. Ecological groups with less than 15 percent of their national extent in the National Wilderness Preservation System comprise an additional 17,288 acres.

There is the potential to reshape the polygon to make the area more manageable (east of McLaughlin Creek and west of Wilfred Creek). During the development of the forest's assessment report in 2013, the public suggested four ecologically unique complexes that contain ecological, recreational, and cultural values to consider for special designation (not specifically wilderness), which included the Glass Mountains.

Polygon 1039 (Black Mountain and Sawmill Canyon)

General Description

Polygon 1039 (Black Mountain and Sawmill Canyon) consists of 11,026 acres ranging in elevation from 7,000 to 8,900 feet. It is located on the east side of the Glass Mountain (Figure B-4, Inyo National Forest evaluation map B) and includes Sawmill Canyon and Black Mountain at 8,895 feet elevation. Roads and a private land parcel protrude into the polygon, making it oddly shaped. The area is bounded by the forest boundary with Bureau of Land Management and a private land parcel on the north and east side.

National Vegetation Classification System data indicates 20 percent of the polygon (2,240 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent group is inter-mountain basins montane sagebrush steppe. An additional 1,940 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The topography is highly variable, but generally includes moderate, open slopes and broad canyons leading to 9,000 foot Black Mountain. Ecosystem types include Jeffrey pine, mountain mahogany, pinyon-juniper, and sagebrush. The polygon includes moderate, open slopes and broad canyons leading to 8,895 foot Black Mountain. There are several perennial stream channels (Sawmill Canyon, Wet Fork and Dry Fork). Klondike Canyon is a major intermittent stream in this area. The polygon intersects with Glass Mountain Inventoried Roadless Area.

There invasive plant species Russian thistle is stable. Native fish and fishless areas were stocked with non-native trout species, which has affected aquatic ecologic integrity. Exotic fish species displaced the small minnow species in area streams and ponds. A mapped meadow is present in Black Canyon in unknown condition and riparian vegetation is present in canyons throughout this area. There have been mostly site-specific legacy impacts to soil from fire, logging and grazing. The impacts from fire are mostly recovered. Air quality is excellent.

Opportunities for Solitude or Primitive and Unconfined Recreation

There are some opportunities for solitude or primitive and unconfined recreation. Topography and vegetation provide screening and distance from developments in the interior portions of the polygon. However, in other areas, State Highway 120 is evident. The potential for encounters with other users is mostly concentrated in perimeter areas, due to the extensive network of forest system roads, including several that cherry stem into the area and partially divide the polygon into many small sections, and in areas adjacent to authorized motorized trails. Sights and sound from roadways and motorized trails penetrate those areas of the polygon. The area is largely undeveloped and there are likely opportunities for primitive and unconfined recreation, including cross-country hiking, hunting, photography and general forest exploration. There is some private property within the polygon.

Other Features of Value

Although the area is largely unsurveyed for cultural resources, there are roughly a dozen known cultural resource sites including several historic structural foundations and remains as well as prehistoric lithic scatters and a pinyon camp complex of rock rings. The polygon includes outstanding views of White Mountains and Adobe Valley.

Manageability

The polygon is irregularly shaped, with a few cherry stem roads and a private land parcel that protrudes into the area at several locations. The north and east boundary are the straight line forest boundary with Bureau of Land Management. The polygon intersects with Glass Mountain Inventoried Roadless Area. There are three water rights.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The invasive plant species Russian thistle is stable and historic fish stocking has altered native aquatic assemblages. The area provides some contiguous habitat for wildlife and air quality is excellent. There are some opportunities for solitude or primitive and unconfined recreation in the interior portion, but opportunities near the perimeter are limited due to the sights and sounds of adjacent forest system roads and authorized motorized trails, including roads that cherry stem into the area, partially dividing the polygon into many small portions. There are three water rights within the area. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 2,240 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 8,450 acres. The potential to reshape the polygon to make it more manageable is unlikely.

Polygon 1068 (Dexter Canyon)

General Description

Polygon 1068 (Dexter Canyon) consists of 12,311 acres with elevations ranging from 7,200 to 8,800 feet. It is located south of Highway 120 and east of Sagehen Peak and includes Dexter Canyon (Figure B-4, Inyo National Forest evaluation map B).

National Vegetation Classification System data indicates 63 percent of the polygon (7,779 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent groups are inter-mountain basins big sagebrush shrubland and inter-mountain basins montane sagebrush steppe. An

additional 3,677 acres is largely comprised of Great Basin pinyon-juniper woodland, which has less than 15 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include Jeffrey pine, pinyon-juniper, and sagebrush. It is a priority habitat for sage grouse. There are numerous perennial channels, including Dexter, Wet, and North Canyons. Intermittent channels also are present. Air quality is excellent.

Brown trout are stocked on private land downstream, and are self-sustaining. This has affected invertebrate populations and the fishless nature of the streams. A departure in the natural fire regime due to fire suppression is evident from pinyon pine expansion in some areas. There have been some watershed restoration activities, including head cut stabilization within several meadow systems including Johnny and Wild Horse Meadows.

There have been legacy impacts to soils from logging infrastructure (skid trails) and grazing impacts, especially in meadows. There is an active sheep grazing allotment, Dexter Creek Allotment. There are no fences, but there are at least three large water troughs and a large water tank in the area. Shepherds drive sheep from place to place and set up camps where they stay overnight. The camps include a trailer, water trucks, up to 1,500 sheep and herding and guard dogs. There are some headcut structures (rocks and logs) that are not substantially noticeable within several of the meadows.

Opportunities for Solitude or Primitive and Unconfined Recreation

A motorized trail dissects the polygon in two. The polygon is bounded by Highway 120, Bureau of Land Management, and private land in the northeastern corner. Private land parcels (Symons Ranch and Adobe Reservoir) and roads protrude into the area making the polygon oddly shaped and noncontiguous. There is a private land inholding northwest of Dexter Canyon. The polygon intersects Dexter Canyon Inventoried Roadless Area. Proximity to motorized recreation (roads and trails), private land parcels, and Highway 120 limit opportunities for solitude or primitive and unconfined recreation. There is gentle terrain with some screening from trees and within the drainages. There are opportunities for primitive-type recreation activities, including cross-country hiking, hunting and general forest exploration. Use is mostly focused around the roads and motorized trails.

Other Features of Value

The area is largely unsurveyed for cultural resources; however, there are 10 documented properties, which include a Basque shelter, a historic dam and reservoir, and numerous prehistoric lithic scatters.

There is priority habitat for sage grouse. Features of value in this polygon include the sensitive Bodie Hills rockcress. There may be rare springsnails in some of the springs in the area.

Manageability

Private land parcels (Symons Ranch and Adobe Reservoir) and roads protrude into the area, making the polygon oddly shaped and noncontiguous, and there are motorized trails within the polygon area, including a motorized trail crosses that splits it in two. Adobe Reservoir is partially on National Forest System land within the polygon and is under special use permit. There is a private land inholding northwest of Dexter Canyon that likely has an access road. The area

contains priority habitat for sage grouse and intersects with Glass Mountain Inventoried Roadless Area.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are few invasive plant species. Fish stocking has altered native aquatic assemblages. Air quality is excellent. Proximity to motorized recreation, private land parcels and Highway 120, limit the opportunity for solitude or primitive and unconfined recreation in some areas. There is one motorized trail that runs north to south and nearly splits the polygon in two. The polygon is irregularly shaped, with cherry stemmed roads and private land parcels (including one inholding) that protrude into the polygon. There is not likely the opportunity to reshape the polygon to make it more manageable. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 7,779 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 3,677 acres.

Polygon 1072 (Mono Craters)

General Description

Polygon 1072 (Mono Craters) consists of 7,574 acres ranging in elevation from 7,200 to 9,172 feet (Crater Mountain). It is located south of Mono Lake and Highway 120 (Figure B-3, Inyo National Forest evaluation map A) and includes Mono Craters, the youngest mountain range in the United States. Most of the polygon is located within the Mono Basin National Forest Scenic Area. It is elongated (vertical) and roads protrude into the polygon along the west side, making it oddly shaped. The southern portion is bounded by private land (U.S. Pumice), leaving a small finger (East Craters Sand Flat) included in the inventory in the southeast corner.

National Vegetation Classification System data indicates 57 percent of the polygon (4,330 acres) consists of ecological groups that may be considered minimally represented in the National Wilderness Preservation System. The most prevalent group is inter-mountain basins big sagebrush shrubland. The remainder of the polygon is largely comprised of pumice flats with its dry forb vegetation type.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types in this polygon include Jeffrey pine, pinyon-juniper, sagebrush, and a special type of dry forb. It is priority habitat for sage grouse. The polygon intersects with the Mono Craters Inventoried Roadless Area and a majority of the polygon is located within the Mono Basin National Forest Scenic Area. The area includes Mono Craters with exposed domes and lava flows and sand flats.

There are rare plants and unique vegetation types on pumice flats. There are a few invasive species, including cheatgrass. The area provides contiguous habitat for wildlife. The polygon contains limited water and there are no mapped meadows or riparian vegetation. The soils are likely at the desired condition. Air quality is excellent. Grazing occurs in the area. There are two sheep allotments, but there is not much use. The polygon includes historic mining. The area also contains United States Geological Survey monitoring equipment and there is the need to maintain and use helicopters to access the equipment.

Opportunities for Solitude or Primitive and Unconfined Recreation

There is little screening in the area, with visibility toward the Mono Basin and Highways 120 and 395. There are several cherry stem roads that protrude into the polygon along the western perimeter and Highway 120 is the northern boundary. The polygon is surrounded by an extensive road system. There is a commercial operation on the private land along the southern boundary (U.S. Pumice). There is a special use permit road for a small road segment on the south end. The proximity to the road system and commercial operation on private land limits the opportunity for solitude. The potential for encounters with other visitors is low. There may be opportunities for primitive and unconfined recreation, including cross-country hiking, photography and general forest exploration.

Other Features of Value

The Mono Craters are a unique volcanic feature.

Manageability

The polygon is irregularly shaped with cherry stem roads that protrude into the western boundary and a narrow finger that reaches south of the private land. The polygon as a whole is narrow and elongated (less than 3 miles across). Private land to the south is owned by U.S. Pumice, which has a commercial operation. There are haul routes under special use permit. The polygon intersects with the Mono Craters Inventoried Roadless Area and a majority of the polygon is located within the Mono Basin National Forest Scenic Area. The area contains priority habitat for sage grouse, which may require management activities inconsistent with wilderness.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Grazing allotments are present but use is low. There is evidence of historic mining activity. There are few developments noted. The United States Geological Survey has monitoring equipment in the area that is maintained by helicopter. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 4,330 acres. The opportunity for solitude is degraded due to the proximity to roads and highways. There may be opportunity for primitive and unconfined recreation. There is limited opportunity to reshape to polygon to make it more suitable or manageable for wilderness characteristics due to the proximity to roads and the already narrow shape of the polygon. There are general tribal concerns regarding tribal access and use. Some existing uses would be nonconforming with wilderness designation, including snowmobile use and mountain biking.

Polygon 1080 (Anderson Point)

General Description

Polygon 1080 (Anderson Point) consists of 1,137 acres with elevations ranging from 8,000 to 8,800 feet. It is contiguous to the South Sierra Wilderness and is located between Monache Meadows and the South Sierra Wilderness, west of Cow Canyon and the Pacific Crest National Scenic Trail (Figure B-11, Inyo National Forest evaluation map I).

National Vegetation Classification System data indicates 52 percent of the polygon (442 acres) consists of an ecological group, inter-mountain basins big sagebrush shrubland, which has less than 10 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include sagebrush and white fir. It includes dry meadows and rolling forested granite outcrops with gentle to moderate slopes. The polygon intersects with the South Sierra Inventoried Roadless Area. The area includes perennial channels associated with springs and the riparian condition is unknown. Legacy and current grazing impact water quality (fecal coliform is present) in the polygon; however, there are no State-listed impaired or threatened streams. There are legacy and current impacts from grazing to soil conditions, with localized impacts. The air quality is nonattainment for ozone (Tulare County). The area contains headcut and gully treatments. They are not substantial, but noticeable. There is a possible spring box near Olivas Cabin.

Opportunities for Solitude or Primitive and Unconfined Recreation

Screening is present. There is some visibility to Monache Meadow below. Occasional to frequent off highway vehicle traffic and dispersed camping occurs. Vehicles and campers along the western boundary can be seen and heard. There is a cherry stem road that protrudes into the western boundary. The area is mostly free from motorized noise except along the western boundary. Olivas Cow Camp (parking area, pastures with fences) is within 200 feet of the boundary. The parking area for Deer Mountain Trail is in the vicinity. Solitude may be affected by these developments. The potential for encounters with other visitors is low to medium, except during the Monache stock drive, which happens twice each year. Current primitive recreation activities in this area include hiking, backpacking and horseback riding on a forest system trail to accesses the South Sierra Wilderness, and also deer hunting in the fall. The degree of challenge is similar to the adjacent wilderness. There are also opportunities for wildlife observation, photography and enjoying nature. Access for winter cross-country skiing is challenging because this area is at least 25 miles from a plowed road.

Other Features of Value

Only 10 percent of the area has been surveyed for cultural resources, but there are known cultural resource sites including prehistoric encampments (lithic scatters).

Manageability

This is a small, irregularly shaped polygon adjoining the South Sierra Wilderness and bounded by the Monache off highway vehicle area along the western boundary. The cherry stem road is regularly used by the grazing permittee and hikers.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Grazing management and watershed restoration is evident in the area. There are developments related to range improvements. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. The opportunity for solitude is degraded due to the proximity to roads (Monache off highway vehicle area) and developments, primarily along the western border. There may be opportunity for primitive and unconfined recreation. There are no unique features. There is not an opportunity to reshape this small polygon to make it more suitable or manageable for wilderness character.

Polygon 1081 (Bakeoven Meadows)

General Description

Polygon 1081 (Bakeoven Meadows) consists of 5,413 acres ranging in elevation from 8,000 to 9,600 feet. It is located east of Kingfisher Ridge and is surrounded by the Golden Trout and the South Sierra Wildernesses (Figure B-11, Inyo National Forest evaluation map I). One road and private land parcel protrude into the southern boundary of the polygon. The west, north and east boundaries are contiguous with the Golden Trout and South Sierra Wildernesses.

National Vegetation Classification System data indicates 8 percent of the polygon (408 acres) consists of an ecological group, Inter-Mountain big sagebrush shrubland, which has less than 10 percent of its national extent protected in the National Wilderness Preservation System. An additional 1,000 acres consists of Great Basin pinyon-juniper woodland and Rocky Mountain aspen forest and woodland, which have less than 15 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include red fir, subalpine fir, and white fir. The polygon's scenery includes granite domes and creeks. The polygon intersects with the South Sierra Inventoried Roadless Area. There are no known stable invasive plant species. The polygon does not provide contiguous connectivity for habitat. Perennial stream channels include Soda Creek and South Fork Kern River; numerous springs and meadows are present. Meadows were evaluated as having fully functional and functional at risk watershed ratings; meadow vegetation was rated in excellent condition in the meadows evaluated. Riparian vegetation on perennial channels is likely in good condition. There are no state-listed impaired or threatened streams. Air quality is nonattainment for ozone (Tulare County). A fish barrier on South Fork Kern cannot be removed. There is heavy fuel loading along Kingfisher Ridge with fuel reduction treatments planned. The area contains watershed treatments, including small structures and rock shoots. The polygon includes livestock grazing and range improvements.

Opportunities for Solitude or Primitive and Unconfined Recreation

Topography and vegetation provide some screening (forested areas and creeks). There is a private inholding with residences along the southern perimeter. Several private cabins to the southeast are within 400 feet of the boundary. There are occasional vehicles and sounds associated with private cabins. One cherry stem road provides access to dispersed camping along South Fork Kern River and extends about 4,500 ft. into the polygon. This is a popular dispersed camping area in summer and fall. Activities on private property, as well as dispersed recreation along the South Fork Kern River, may affect solitude. The potential for encounters with other visitors is low to medium. Current primitive recreation activities in this area include hiking, backpacking and horseback riding on two forest system trails that access the Golden Trout Wilderness; fishing on the South Fork Kern River; and deer hunting in the fall. The degree of challenge is similar to the adjacent wilderness. This is a popular primitive recreation area during summer and fall months. There are also opportunities for wildlife observation, photography and enjoying nature, particularly along the wild and scenic South Fork Kern River. Access for winter cross-country skiing is challenging because this area is at least 25 miles from a plowed road. Opportunities for solitude or primitive and unconfined recreation are limited along an extensive network of authorized forest system roads bordering and cherry stemming to shape this polygon. Sights and sounds from the roads would likely penetrate a large portion of this relatively small polygon.

Other Features of Value

The area includes a portion of the South Fork of the Kern River, part of the designated Kern Wild and Scenic River, flowing north to south through the middle of the polygon. Also of value are the views of Monache Mountain, a unique volcanic feature.

Less than a quarter of the area has been surveyed for cultural resources. Five known sites include remains of a log cabin, other historic structure remains, historic debris scatters and prehistoric lithic scatters.

The polygon contains rare and sensitive plant species: Kern milkvetch, mountain yellow violet, Tulare rockcress, and field ivesia.

Manageability

The polygon intersects with the South Sierra Inventoried Roadless Area. The polygon is contiguous with Golden Trout Wilderness along the west, north and east perimeters. There is a private land inholding (with cabins) along the south perimeter, with road access. One cherry stem road provides access to dispersed camping along South Fork Kern River and there is the potential for vehicle incursions off of the cherry stem road. There is a state wildlife reserve along the boundary in the southeast corner (section 34, T20S, R35E).There is proposed fuel reduction through vegetation treatments in this area. Two water rights are present and there is a grazing allotment.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 408 acres. Ecological groups with less than 15 percent of their national extent in the National Wilderness Preservation System comprise an additional 1,000 acres. The opportunity for solitude is degraded due to the proximity to the Monache OHV area, dispersed recreation along the South Fork Kern River, and private inholdings with developments, primarily along the southern border. There may be opportunity for primitive and unconfined recreation. There is no good opportunity to reshape this polygon to make it more suitable or manageable for wilderness character.

Polygon 1092 (Slide Canyon)

General Description

Polygon 1092 (Slide Canyon) consists of 4,252 acres with elevations ranging from 4,400 to 10,000 feet. It is contiguous to the Golden Trout Wilderness and is located southeast of Horseshoe Meadows Road, west of Highway 395, Owens Lake and the Cottonwood Power Plant (Figure B-10, Inyo National Forest evaluation map H). Slide Canyon runs east through the polygon. The polygon is oddly shaped around Horseshoe Meadow Road on the north and the forest boundary on the east side.

National Vegetation Classification System data indicates 1 percent of the polygon (37acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. An additional 1,000 acres consists of Great Basin pinyon-juniper woodland and Rocky Mountain aspen forest and woodland, which have less than 15 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper, white fir, and xeric shrublands and blackbrush. It does not intersect or overlap with any other designated areas and includes steep terrain. There is a departure from natural conditions due to the abundance of cheatgrass, an invasive plant species. Fish stocking has altered native aquatic assemblages. The condition of riparian vegetation associated with the perennial stream channel, Cottonwood Creek, and canyons is not known. Soils are likely meeting desired conditions. The air quality is nonattainment for pm10 (Owens Valley pm10 planning area). There are Los Angeles Department of Water and Power water diversions within this area.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is in the vicinity of roads, including Horseshoe Meadow Road (moderately use paved road that access campgrounds and trailheads). The area is within one mile of Cottonwood Power Plant and Highway 395. Owens Valley and Highway 395 are visible and can be heard from much of the area. There may be some opportunity for solitude within the canyons. There is nothing notable that would limit the opportunity for primitive or unconfined recreation.

Other Features of Value

Slide Canyon runs east through the polygon.

Manageability

This is an irregularly shaped polygon that is bounded between the existing wilderness boundary and the forest boundary. There is a private land parcel that protrudes into the polygon.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are Los Angeles Department of Water and Power infrastructure (water diversions) within the area. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with less than 15 percent of their national extent in the National Wilderness Preservation System comprise an additional 1,000 acres. The natural quality is degraded by the abundance of invasive cheatgrass. Air quality is nonattainment for pm10. The opportunity for solitude is degraded due to the proximity to roads, the Cottonwood Power Plant and Highway 395. There is opportunity for primitive and unconfined recreation, although it is very limited due to the location of the polygon. There is not really an opportunity to reshape the polygon, due to its small size and irregularly shaped boundary that is drawn tightly between existing wilderness and the forest boundary.

Polygon 1098 (Escarpment from George Creek to Hogback Creek)

General Description

Polygon 1098 (Escarpment from George Creek to Hogback Creek) consists of 1,476 acres with elevations ranging from 6,000 to 8,000 feet. It is contiguous to the John Muir Wilderness and is located along the Sierra Nevada escarpment between George Creek and Hogback Creek (Figure B-10, Inyo National Forest evaluation map H). The polygon is located between the John Muir Wilderness on the west and Alabama Hills Special Recreation Management Area (Bureau of Land Management) on the east. A motorized trail dissects the northwestern edge of the polygon and a

road along the southern portion of the polygon makes it oddly shaped along the southern boundary. In addition, the eastern boundary is a straight line due to the forest boundary with Bureau of Land Management (Alabama Hills Special Recreation Management Area).

National Vegetation Classification System data indicates less than 1 percent of the polygon (5 acres) consists of an ecological group that has less than 10 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper and sagebrush. It contains steep terrain. The invasive plant species cheatgrass is abundant. Fish stocking has also altered native aquatic assemblages. Riparian vegetation occurs in the perennial George Creek and canyons. The air quality is nonattainment for pm10 (Owens Valley pm10 planning area). A motorized trail dissects the northwestern edge of the polygon and a road forms the southern boundary. Los Angeles Department of Water and Power infrastructure may be in the area. No other developments were noted.

Opportunities for Solitude or Primitive and Unconfined Recreation

Opportunities for solitude or primitive and unconfined recreation are limited in this small area that is bordered by roads, including a cherry stem road from the Alabama Hills Special Recreation Management Area (Bureau of Land Management) to the east., and a motorized trail along the northern and southern perimeter. The Owens Valley and Highway 395 are visible from parts of the area.

Other Features of Value

There are no other features of value documented.

Manageability

The polygon Intersects with the Independence Creek Inventoried Roadless Area. This is an irregularly shaped, small polygon that adjoins existing wilderness and is drawn to the forest boundary.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. The natural quality is degraded by the presence of invasive cheatgrass. Air quality is nonattainment for pm10. The opportunity for solitude or primitive and unconfined recreation is limited due to the proximity to roads, motorized trails and visibility to Highway 395. There is not an opportunity to reshape the small polygon.

Polygon 1099 (Escarpment – Shephard Creek)

General Description

Polygon 1099 consists of 1,092 acres with elevations ranging from 5,800 to 9,000 feet. It is contiguous to the John Muir Wilderness and is located along the Sierra Nevada escarpment between Shephard Pass Trailhead and Bairs Creek (Figure B-10, Inyo National Forest evaluation

map H). The polygon is located between John Muir Wilderness on the west and Bureau of Land Management land on the east. There is one road that protrudes into the polygon along the western boundary.

National Vegetation Classification System data indicates less than 1 percent of the polygon (4 acres) consists of an ecological group, Great Basin foothill and lower montane riparian woodland and shrubland has less than 10 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper, sagebrush, and xeric shrublands and blackbrush. The area includes steep terrain. The majority of the polygon intersects with the Independence Creek Inventoried Roadless Area. There is a departure from natural conditions due to the presence of invasive plant species (cheatgrass is abundant). Fish stocking has altered native aquatic assemblages. There is riparian vegetation associated with the perennial stream channel (Shepard Creek). Soils are likely meeting desired conditions. The air quality is nonattainment for pm10 (Owens Valley pm10 planning area).

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is in the vicinity of roads on Bureau of Land Management lands. There is one short cherry stem road that protrudes into the polygon. The Owens Valley and Highway 395 are visible and can be heard from much of the area. The opportunity for solitude or primitive and unconfined recreation is limited due to the proximity to roads and visibility to Highway 395; sights and sounds from the roads would likely penetrate most of this small polygon.

Other Features of Value

None were noted.

Manageability

The majority of the polygon intersects with the Independence Creek Inventoried Roadless Area. This small polygon that adjoins existing wilderness and is drawn to the forest boundary.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are no known developments that would degrade the undeveloped quality. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. The opportunity for solitude or primitive and unconfined recreation is limited due to the proximity to roads and visibility to Highway 395; sights and sounds from the roads would likely penetrate most of this small polygon. There is not an opportunity to reshape this small polygon.

Polygon 1106 (Escarpment – Onion Valley South)

General Description

Polygon 1106 (Escarpment-Onion Valley South) consists of 1,408 acres ranging in elevation from 5,500 to 11,000 feet. It is contiguous to the John Muir Wilderness and is located along the Sierra Nevada escarpment south of Onion Valley and Independence Creek (Figure B-9, Inyo National

Forest evaluation map G). The polygon is shaped by road and recreation developments in Onion Valley, Independence Creek, the existing wilderness boundary along the western edge, and cherry stem roads that protrude into the area along the eastern edge of the polygon.

National Vegetation Classification System data indicates 4 percent of the polygon (52 acres) consists of ecological groups, Great Basin foothill and lower montane riparian woodland and shrubland which have less than 10 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area is characterized by steep to precipitous rugged terrain in the canyons and moderate to gentle slopes on the alluvial fans and benches. Ecosystem types include sagebrush and xeric shrublands and blackbrush. The polygon intersects with the Independence Creek Inventoried Roadless Area. The small area is surrounded by roads, including one cherry stem road in the middle of the polygon. Highway 395 and the private land developments in the Owens Valley are highly visible from most of the area, except within the canyons. There is a departure from natural conditions due to the abundance of invasive cheatgrass and past vegetation alteration from historic mining activities. Fish stocking has altered native aquatic assemblages. Pinyon Creek, a perennial stream channel, and canyons are in the polygon. Soils are likely meeting desired conditions. The air quality is nonattainment for pm10 (Owens Valley pm10 planning area).

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is located in the vicinity of a concentrated recreation area (Onion Valley), which has campgrounds, trailheads, and the Seven Pines Recreation Residence Tract. The proximity to roads, a concentrated recreation area and improvements limit the opportunity for solitude or primitive and unconfined recreation in these areas. Steep terrain limits access to the area. Use in the area includes hiking Pinyon Creek, hunting, pinyon pine nut gathering and cross-country skiing.

Other Features of Value

The area includes outstanding views of the Sierra Nevada and features such as Pinyon Pine Falls. Riparian water birch (tracked by California Fish and Wildlife) is found in the polygon. Springs may contain rare springsnails.

Manageability

The area is contiguous with an existing wilderness area (John Muir Wilderness) along the western edge of the polygon. The polygon intersects with the Independence Creek Inventoried Roadless Area. The polygon is surrounded by roads, including one road that protrudes into the middle of the polygon. The area is adjacent to lands managed by the Inyo National Forest.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Fish stocking has altered native aquatic assemblages. Air quality is nonattainment for pm10. The opportunity for solitude or primitive and unconfined recreation is

limited due to proximity to developed recreation use, motorized road system (including a cherry stem road) and visibility to Highway 395. There is limited potential to reshape the polygon.

Polygon 1108 (Escarpment – Onion Valley North)

General Description

Polygon 1108 (Escarpment-Onion Valley North) consists of 2,100 acres with elevations ranging from 5,000 to 9,500 feet. It is contiguous to the John Muir Wilderness and is located along the Sierra Nevada escarpment north of Onion Valley and Independence Creek (Figure B-9, Inyo National Forest evaluation map G). This polygon is shaped roads and recreation developments in Onion Valley and a private land parcel that protrudes into the boundary along the eastern edge.

National Vegetation Classification System data indicates less than 1 percent of the polygon (4 acres) consists of ecological groups, Great Basin foothill and lower montane riparian woodland and shrubland which have less than 10 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include sagebrush and xeric shrublands and blackbrush. The area is characterized by steep to precipitous rugged terrain in the canyons and moderate to gentle slopes on the alluvial fans and benches. The polygon intersects with the Tinemaha Inventoried Roadless Area (majority of the polygon along the western portion of the polygon). The polygon is surrounded by roads and a private land parcel (Boron Springs) protrudes into the southeast corner of the polygon. It is within the 2007 Inyo Complex (a 30,000-acre fire) and 2008 flood and mudflow event (Oak Creek); catastrophic events that impacted the hydrologic and soil conditions in the area. There are water diversions (including diversions and ditches near Tub Springs), old ranch foundations, fences and corrals. In addition, there are three prehistoric sites (lithic scatters). There is a departure from natural conditions due to the abundance of invasive cheatgrass and presence of salt cedar. Fish stocking has also altered native aquatic assemblages. Water diversions have manipulated the species composition. The air quality is nonattainment for pm10 (Owens Valley pm10 planning area).

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is located in the vicinity of a concentrated recreation area (Onion Valley), which has campgrounds, trailheads, and the Seven Pines Recreation Residence Tract. In addition, Highway 395 and the private land developments in the Owens Valley are highly visible from most of the area, except within the canyons. The proximity to roads, concentrated recreation area, and improvements limits the opportunity for solitude or primitive or unconfined recreation in this small polygon. The area currently receives low to medium use, primarily focused around Seven Pines Recreation Residence Tract, Independence Creek and Rex Montis Mine Road. Hunting is a popular activity during the fall months.

Other Features of Value

Features of this polygon include black oaks, riparian water birch (tracked by California Fish and Wildlife), and Inyo star-tulip, a Forest Service sensitive species. There are outstanding wildflower displays within the Inyo Complex fire area. Springs may contain rare springsnails. Tub Springs lies within the area.

Manageability

The area is contiguous with an existing wilderness area (John Muir Wilderness) along the western edge of the polygon. The polygon is surrounded by roads and a private land parcel (Boron Springs) protrudes into the southeast corner of the polygon. The polygon intersects with the Tinemaha Inventoried Roadless Area (majority of the polygon along the western portion of the polygon). The private land parcel is believed to be owned by the Los Angeles Department of Water and Power and is not developed. Bureau of Land Management land is also adjacent and is undeveloped. Most of the area is adjacent to lands managed by the Inyo National Forest. There are three water rights in the area.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The appearance of naturalness is somewhat degraded by abundant invasive cheatgrass, some salt cedar, impacts to the hydrologic and soil conditions from the 2007 Inyo Complex fire and 2008 flood and mudflow event, and developments (water diversions, old ranch foundations, fences and corrals. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Fish stocking in the lower and upper reaches of Independence Creek has altered native aquatic assemblages. The air quality is nonattainment for pm10. The opportunity for solitude or primitive and unconfined recreation is limited in this small polygon due to the proximity to developed recreation use, motorized road system, and visibility to Highway 395 and private land development. There is limited opportunity to reshape this small polygon.

Polygon 1109 (Escarpment – Oak Creek)

General Description

Polygon 1109 (Escarpment-Oak Creek) consists of 1,318 acres ranging in elevation from 5,000 to 7,000 feet. It is contiguous to the John Muir Wilderness and is located along the Sierra Nevada escarpment between North Fork Oak Creek and South Fork Oak Creek, southeast of Baxter Pass Trailhead (Figure B-9, Inyo National Forest evaluation map G). This polygon is shaped by roads and private land parcels that protrude into the area, along the north and southeastern edge. The western portion follows the existing wilderness boundary.

National Vegetation Classification System data indicates 5 percent of the polygon (68 acres) consists of ecological groups, Great Basin foothill and lower montane riparian woodland and shrubland which have less than 10 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem type is xeric shrublands and blackbrush. The area is characterized by steep to precipitous rugged terrain in the canyons and moderate to gentle slopes on the alluvial fans and benches. The polygon is bordered by roads and a private land parcel (Bright Ranch). The polygon intersects with Tinemaha Inventoried Roadless Area (the majority of the area along the western portion of the polygon). The area has Los Angeles Department of Water and Power water diversions, which need to be maintained. The polygon is within the 2007 Inyo Complex (approximately 30,000 acre fire) and 2008 flood and mudflow event (Oak Creek); catastrophic

events impacted the hydrologic and soil conditions in the area. South Fork Oak Creek jumped into a new channel during the flood event, and the channel morphology of both North Fork and South Fork Oak Creek were significantly impacted. Following these events, erosion rates in the area were accelerated. Riparian vegetation is recovering, but is not likely at pre-fire and pre-flood canopy and density levels. There are invasive plants in the riparian areas. There is abundant invasive cheatgrass and salt cedar is present in the polygon. The air quality is nonattainment for pm10 (Owens Valley pm10 planning area). The area has Los Angeles Department of Water and Power water diversions on North Fork and South Fork Oak Creek.

Opportunities for Solitude or Primitive and Unconfined Recreation

Highway 395 and the private land developments in the Owens Valley are visible, except within the canyons and deep stream channels. Opportunities for solitude or primitive and unconfined recreation are limited due to the heavily traveled paved road along the southern boundary, another paved road along the north, and an extensive network of authorized forest system roads to the east and north. There is a private land parcel (Bright Ranch) with developments adjacent to the polygon and there are also two shooting ranges in the vicinity. Sights and sounds from the roads would likely penetrate most of this small polygon. The appearance of naturalness is impacted by post-fire flooding of Oak Creek, and opportunities for solitude or primitive and unconfined recreation may be affected in areas currently authorized for active restoration treatments involving motorized tools. In addition, there are Los Angeles Department of Water and Power water diversions that are maintained in the area.

Other Features of Value

This polygon includes black oaks, riparian water birch (tracked by California Fish and Wildlife), and outstanding wildflower displays within the Inyo Complex fire area. Post-flood geography is also a feature of value.

Manageability

The area is contiguous with an existing wilderness area, the John Muir Wilderness, along the western edge of the polygon. Hydrologic conditions in the area are somewhat unstable (large gullies on Oak Creek), although are recovering and stabilizing. The polygon is bordered by roads and a private land parcel (Bright Ranch). The polygon intersects with Tinemaha Inventoried Roadless Area (the majority of the area along the western portion of the polygon). The area has Los Angeles Department of Water and Power water diversions, which need to be maintained. It is an oddly shaped polygon due to roads and private land parcels that protrude into the boundary along the north and southeastern edge of the polygon. There is a shooting range in the vicinity of the polygon that could complicate management of the area.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The opportunity for solitude is limited in this small polygon due to the proximity to roads, visibility to Highway 395 and private land development, and noise from a target shooting range. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. The appearance of naturalness is degraded by the impact to hydrologic and soil conditions from the 2007 Inyo Complex fire and 2008 flood and mudflow event. Air quality is nonattainment for PM10. The area has Los Angeles Department of Water and Power water

diversions on both North Fork and South Fork Oak Creek. There is some opportunity for primitive and unconfined recreation. There is not an opportunity to reshape the polygon.

Polygon 1110
(Escarpment between Sawmill Creek and Baxter Pass Trailhead)

General Description

Polygon 1110 (Escarpment between Sawmill Creek and Baxter Pass Trailhead) consists of 1,650 acres with elevations ranging from 4,500 to 10,000 feet. It is contiguous to the John Muir Wilderness and is located along the Sierra Nevada escarpment south of Sawmill Creek and north of Baxter Pass Trailhead (Figure B-9, Inyo National Forest evaluation map G). It is shaped by roads and private land parcels that protrude into the area along the eastern edge, and nearly split the polygon in two. The western portion follows the existing wilderness boundary.

National Vegetation Classification System data indicates 2 percent of the polygon (36 acres) consists of an ecological group that has less than 10 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The ecosystem type is sagebrush. A small portion of the area is within Sierra Nevada bighorn sheep designated critical habitat. The area is characterized by steep to precipitous rugged terrain in the canyons and moderate to gentle slopes on the alluvial fans and benches. The area intersects with Tinemaha Inventoried Roadless Area along the northern portion of the polygon. The polygon is surrounded by roads. A road and private land parcel protrude into the middle of the polygon splitting it nearly in half. There are four roads in the vicinity or that cherry stem the area. Bureau of Land Management land (eastern boundary) is adjacent and is undeveloped. It is within the 2007 Inyo Complex (a 30,000-acre fire). The Inyo Complex wildfire burned through the area at moderate to high intensity in 2007, which impacted hydrologic and soil conditions in the area. Erosion rates in the area were accelerated following the fire, but are recovering. Riparian vegetation around the springs is recovering, but is not likely at pre-fire canopy levels. Air quality is nonattainment for pm10 (Owens Valley pm10 planning area). There is a departure from natural conditions due to the presence of invasive plant species (cheatgrass is abundant). Grazing is occurring in the area. A few historic structural remains occur in the area. Known sites include several prehistoric sites (milling slicks and lithic scatter) and a historic rock structure, a stone foundation near Baxter Pass. No other developments were noted.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is in the vicinity of roads and within 1.5 miles of Highway 395, which are visible and can be heard from much of the area. Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads bordering or cherry stemming the polygon. One road nearly bisects the polygon. Sights and sounds from the roads would likely penetrate most of this small polygon. The area is popular for hunting and receives low to medium use during the fall months. The area receives a low amount of use other times of the year.

Other Features of Value

The polygon includes scenic views of Inyo Mountains, alluvial fans with springs, rare pinyon rockcress and outstanding spring wildflower displays within the Inyo Complex fire area.

Manageability

The area is contiguous with an existing wilderness area, the John Muir Wilderness, along the western edge of the polygon. The area intersects with Tinemaha Inventoried Roadless Area along the northern portion of the polygon. The polygon is surrounded by roads. A road and private land parcel protrude into the middle of the polygon splitting it nearly in half. There are four roads in the vicinity or that cherry stem the area. Bureau of Land Management land (eastern boundary) is adjacent and is undeveloped. A small portion of the area also contains designated critical habitat for Sierra Nevada Bighorn Sheep, which may require management activities under the Endangered Species Act.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads bordering or cherry stemming the polygon. One road nearly bisects the polygon. Sights and sounds from the roads would likely penetrate most of this small polygon. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. The appearance of naturalness is degraded by the presence of invasive plant species (cheatgrass), as well as the impact to the hydrologic and soil conditions from the 2007 Inyo Complex fire. Air quality is nonattainment for pm10. There is not an opportunity to reshape the polygon.

Polygon 1112
(Escarpment between Goodale Creek and Sawmill Creek)

General Description

Polygon 1112 consists of 4,949 acres with elevations ranging from 4,500 to 10,500 feet. It is contiguous to the John Muir Wilderness and is located along the Sierra Nevada escarpment south of Goodale Creek and north of Sawmill Creek, and in the vicinity of Division Creek Powerhouse and Sawmill Pass Trailhead (Figure B-9, Inyo National Forest evaluation map G). This is shaped by the existing wilderness boundary, along the western edge of the polygon.

National Vegetation Classification System data indicates 35 percent of the polygon (1,721 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is inter-mountain basins big sagebrush shrubland. An additional 540 acres of the polygon consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The ecosystem types are sagebrush and xeric shrublands and blackbrush. The area is characterized by steep to precipitous rugged terrain in the canyons and moderate to gentle slopes on the alluvial fans and lava flows. The area intersects with Tinemaha Inventoried Roadless Area (northern portion of the polygon). The area has a Los Angeles Department of Water and Power water diversion dam on Division Creek. There is a departure from natural conditions due to the presence of invasive plant species (Russian thistle and cheatgrass are abundant). Frequent fires have resulted in a change to species composition. Fish stocking has also altered native aquatic

assemblages. The conditions of riparian areas are poor due to invasive plant species. There has been little cultural resource survey work in the area. There are approximately twenty documented sites that include prehistoric rock shelters, lithic and artifact scatters, as well as portions of the Division Creek Power Plant, town site, and construction camp within the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is dissected by motorized trails, and is in the vicinity of forest roads and the Division Creek Powerhouse. In addition, Highway 395 is also visible, except within the lava flow area, and can be heard from much of the area. Proximity to motorized recreation (roads and trails), the Division Creek Powerhouse and Highway 395, limit opportunities for solitude or primitive and unconfined recreation. A portion of the area is popular for motorized recreation (four wheel drive), dispersed camping, mineral prospecting and hiking (western edge, near Armstrong Canyon). The Sawmill Pass Trail is also in the area and receives some hiking use. Hunting is a popular activity in the fall.

Other Features of Value

The polygon includes rare narrow leaved cottonwood, Panamint Mountain lupine, and Big Pine biscuit root. A small portion of the area is Sierra Nevada bighorn sheep designated critical habitat. Springs in the area may contain rare springsnails. There are scenic lava flows and a scenic entrance to Spooky Canyon. The area includes outstanding spring wildflower displays.

Manageability

The area is contiguous with the John Muir Wilderness along the western border of the polygon. Bureau of Land Management land (eastern boundary) is adjacent and is undeveloped. The area intersects with Tinemaha Inventoried Roadless Area (northern portion of the polygon). Motorized trails are located within the polygon, and forest system roads border and cherry stem the polygon. A small portion of the area also contains designated critical habitat for Sierra Nevada Bighorn Sheep, which may require management activities under the Endangered Species Act.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The opportunity for solitude or primitive and unconfined recreation is limited due to the proximity to motorized roads and trails, Division Creek Powerhouse, and visibility to Highway 395 and noise from the highway. There may be some opportunity for primitive and unconfined recreation. There are some developments, including the Los Angeles Department of Water and Power Division Creek Powerhouse and water diversion dam and their effect to the undeveloped quality is localized. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 1,721 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 540 acres. The natural quality is degraded by the presence of invasive plant species (Russian thistle and cheatgrass). Invasive plant species are present within riparian areas and fish stocking has also altered native aquatic assemblages. There is not an opportunity to reshape the polygon, as the western edge of the polygon which adjoins designated wilderness contains motorized trails.

Polygon 1115 (Escarpment – Tinemaha Creek)

General Description

Polygon 1115 (Escarpment-Tinemaha Creek) consists of 3,485 acres with elevations ranging from 5,600 to 6,400 feet. It is contiguous to the John Muir Wilderness along the southwest and southern boundaries and is located along the Sierra Nevada escarpment (Figure B-9, Inyo National Forest evaluation map G). It includes Birch Creek, Tinemaha Creek and Red Mountain Creek, and is in the vicinity of Red Lake Trailhead. This is an oddly shaped polygon due to roads along the northwestern edge of the polygon which separates this area from the existing wilderness boundary (there is a gap between this portion of the polygon and existing wilderness boundary). The existing wilderness boundary was drawn to exclude motorized trails and the forest boundary along the eastern side of the boundary (private land parcel and Bureau of Land Management land).

National Vegetation Classification System data provided by The Wilderness Society indicates 84 percent of the polygon (2,935 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent group is inter-mountain basins big sagebrush shrubland. An additional 540 acres of the polygon consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The ecosystem type is sagebrush. The area contains gentle slopes. There has been moderate human impact to plant communities and there is a departure from natural conditions due to the presence of invasive plant species (cheatgrass and Russian thistle are abundant and increasing). This area contains several unauthorized or gated authorized roads. Use in this area is very limited, and impacts to wildlife are minimal. Motorized trails that run east to west dissect this polygon in three locations. The polygon intersects with the Tinemaha Inventoried Roadless Area along the southern portion of the polygon, south of motorized trails and Red Mountain Creek. Historic fish stocking has altered native aquatic assemblages. Grazing has occurred in this area. Air quality is nonattainment for pm10.

Opportunities for Solitude or Primitive and Unconfined Recreation

There are three motorized trails that run east to west and dissect the polygon in three locations, which limits the opportunity for solitude. In addition, the topography is gentle slopes, with not much screening. Highway 395 is visible from much of the area. Nothing was noted related to primitive and unconfined recreation, although there may be opportunity for primitive-type recreation activities, such as cross-country hiking and general forest exploration.

Other Features of Value

The polygon includes springs that may contain rare springsnails. The presence of Panamint Mountains lupine and riparian water birch contributes to the uniqueness of the ecosystem found in the area which is tracked by California Fish and Wildlife. The area is largely unsurveyed for cultural resources, but there are known cultural resource sites including two prehistoric lithic scatters.

Manageability

The area is contiguous with existing wilderness on the southern end of the polygon; however there are multiple motorized trails that bisect the area. The northern portion of the polygon is separated from the existing wilderness boundary by a road. There are private land parcels along the boundary of the polygon, including lands owned by Los Angeles Department of Water and Power. The area is also adjacent to lands managed by the Bureau of Land Management.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 2,935 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 540 acres. The apparent naturalness has been degraded by the presence of invasive plant species (cheat grass and Russian thistle) and fish stocking has altered native aquatic assemblages. Opportunities for solitude or primitive and unconfined recreation are limited due to the motorized trail system and Highway 395.

Polygon 1116 (Escarpment – McMurry Meadow)

General Description

Polygon 1116 consists of 2,437 acres with elevations ranging from 6,800 to 8,500 feet. It is contiguous to the John Muir Wilderness and is located along the Sierra Nevada escarpment between Little Pine Creek on the north and Tinemaha Creek to the south (Figure B-9, Inyo National Forest Evaluation Maps evaluation map G). It is southwest of the Crater Mountain Area of Critical Environmental Concern (Bureau of Land Management) and includes McMurry Meadow. It is shaped by the existing wilderness boundary on the western edge and private land parcels on the northern and southern boundary.

National Vegetation Classification System data indicates 61 percent of the polygon (1,478 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent group is inter-mountain basins big sagebrush shrubland. An additional 911 acres of the polygon consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include mountain mahogany and sagebrush. There are perennial stream channels such as Birch Creek, Fuller Creek and an unnamed perennial flow through this area. It intersects a small portion of the Tinemaha Inventoried Roadless Area along the western edge of the polygon. Fire in 2002 contributed sediment to the channels, impacts to stream morphology and the function is unknown. There is a departure from natural conditions due to the presence of invasive plant species (cheatgrass and Russian thistle are abundant and increasing). Historic fish stocking has altered native aquatic assemblages. Drainages and slopes are impacted from grazing activities including trampled soils and trailing in shrubs. Meadows are mostly in functional-at-risk watershed condition, but old watershed channel structures provide stability. Motorized trails dissect the north half of the polygon. The air quality is excellent.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography is moderate to gentle, with some screening from slopes, canyons, and drainages. There are very few trees that provide screening. There are authorized motorized trails within the north half of the polygon, limiting the opportunity for solitude or primitive and unconfined recreation. The area receives low to moderate amounts of use, primarily focused around the roads, motorized trails and Birch Lake Trailhead.

Other Features of Value

The polygon includes Sierra Nevada bighorn sheep designated critical habitat. Springs may contain rare springsnails. The area includes the sensitive plant, Inyo star-tulip, as well as riparian water birch, a unique ecosystem tracked by California Fish and Wildlife. McMurray Meadows is a large, botanically diverse, unique meadow on the eastern escarpment. Roughly half the area has been surveyed for cultural resources; five documented cultural resource sites include prehistoric lithic and artifact scatters.

Manageability

Roads and motorized trails dissect the north half of the polygon. There is a road along the eastern boundary which narrows the polygon along the southern half. There is also a private land parcel that protrudes into the southern half of the polygon. The area contains designated critical habitat for Sierra Nevada bighorn sheep, which may require management activities under the Endangered Species Act. There are two existing water rights.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 1,478 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 911 acres. Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized motorized trails within the polygon and authorized forest system roads along the perimeter; sights and sounds would likely penetrate this small polygon. The appearance of naturalness is degraded by the presence of invasive cheat grass and Russian thistle. Fish stocking has altered native aquatic assemblages. Air quality is excellent. The location of the roads, motorized trails, and forest boundary do not allow the polygon to be reshaped.

Polygon 1140 (Coyote)

General Description

Polygon 1140 (Coyote) consists of 75,299 acres with elevations ranging from 4,800 to 10,400 feet. It is located southeast of Bishop Creek Recreation Area and southwest of Bishop, west of Big Pine, and north of Big Pine Creek Recreation Area (Figure B-7, Inyo National Forest evaluation map E). The southwest portion of the polygon is contiguous with the John Muir Wilderness. There are private land inholdings and roads that protrude into this polygon. The western boundary follows Highway 168 and recreation developments in Bishop Creek, as well as the John Muir Wilderness boundary along the southwest portion of the polygon. The southern boundary follows road and recreation developments in Big Pine Creek and the eastern boundary follows the forest boundary (Bureau of Land Management and private land).

National Vegetation Classification System data indicates 29 percent of the area of the polygon (21,951 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent groups are inter-mountain basins montane sagebrush steppe, inter-mountain basins big sagebrush shrubland, and Great Basin xeric mixed sagebrush shrubland. An additional 27,271 acres of the polygon consists of Great Basin pinyon-juniper woodland, and Rocky Mountain aspen forest and woodland, which have less than 15 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include alpine, Jeffrey pine, mountain mahogany, pinyon-juniper, red fir, sagebrush, sub-alpine forest, white fir, and xeric shrublands and blackbrush. The topography is highly variable, with steep to gentle varied aspects. There are gentle open ridges at the top, with minimal vegetation, steep slopes and canyons to the north and along the west edge dropping into Bishop Creek. This polygon is very large and is adjacent to or includes developed areas such as trailheads, campgrounds, trails, day-use areas and dispersed camping sites. The air quality is excellent. The majority of this polygon provides a contiguous habitat for wildlife. The area includes contiguous habitat for aquatics. Some streams flow to Big Pine Creek, which flows to diversions of the Owens Valley. Fish barriers prevent introduced trout from invading frog habitat. Along the escarpment (eastern portion of the polygon), streams that flow down the escarpment do not make it to the Owens River due to diversions and sub-terrain flows. There are several lakes and numerous perennial stream channels, including Coyote Creek, Baker Creek, Cow Creek and Onion Creek. There are also numerous areas with high water tables and meadows. Meadow restoration projects have been implemented. Areas are mostly stable and the degree and severity of current impacts is unknown.

The area includes active grazing allotments and improvements, as well as a landing strip that is still evident. Shannon Canyon and other canyons are used as cattle trails to access higher elevations. There are legacy and current grazing impacts to meadows and riparian areas. There are legacy and current grazing impacts to meadows and riparian areas. Meadow restoration projects have been implemented. There was also historic mining activity, with scattered mining sites noticeable in the lower elevations. There are structures related to Schober Mine (western portion of the polygon, west of Lookout Mountain) and these are deteriorating. There are other mining prospects noted on the United States Geological Survey Quad in the western portion of the polygon. Most of the area is unsurveyed for cultural resources, but there are two known prehistoric sites with lithic scatter and a rock cairn of indeterminate age. Within the Bishop Creek wildland-urban interface there is planning for fuels treatments.

Public comments indicate there are trails used by mountain bikers in the area. There is minimal to moderate impact to plant communities, however, there is cheat grass (invasive plant species) at lower elevations and it is increasing. Historic fish stocking has altered native aquatic assemblages. The Coyote Flat area is managed for rare amphibians including the Sierra Nevada yellow-legged frog.

Opportunities for Solitude or Primitive and Unconfined Recreation

There is some screening due to topography and vegetation. There is some visibility to developments in Owens Valley (including Highway 395), as well as the Bishop Creek Recreation Area and the Big Pine Creek Recreation Area. The polygon is close to recreation developments

along the western (Bishop Creek) and southern (Big Pine Creek) perimeter. Housing developments and recreation from local neighborhoods occur within adjacent areas.

Numerous motorized trails dissect this area from the north to south and east to west. In addition, there are private land inholdings and the roads that protrude into this polygon. Sights and sounds within the polygon are affected by off highway vehicle recreation, recreational shooting and dispersed camping, which are popular activities in the area. Bishop Creek (Highway 168) has developed recreation facilities. The south side of the polygon is Big Pine Creek which has concentrated recreation use and developed recreation facilities. Along the eastern portion of the polygon (along the escarpment), Highway 395 can be heard, along with the buzzing of the power lines nearby. There is a moderate to high potential for encounters with other visitors. The area is popular during the spring and summer, and during hunting season in the fall. There is minimal use during the winter. Use is primarily focused along motorized trails and developed recreation sites adjacent to area. Shannon Canyon and other canyons along the eastern escarpment are used as cattle trails to access higher elevations. There are opportunities for primitive and unconfined recreation, particularly in the Green Lake area. There are opportunities for primitive-type recreation activities, including hiking, fishing, hunting, and general forest exploration with some degree of challenge.

Other Features of Value

Many rare plant and sensitive plant species, including Father Crowley's lupine, Inyo beardtongue, Big Pine biscuitroot, and Morefield's cinquefoil are found in the polygon. Springs within the area may contain rare springsnails. Coyote itself is a unique geologic feature, including a high plateau extending from the Sierra Nevada, with mixed carbonate and granitic geology and relict moraines. The area includes outstanding views of glaciers, the high Sierra, Big Pine Creek, Bishop Creek and the White Mountains.

Manageability

This is a large polygon located between the John Muir Wilderness and the forest boundary (within one mile of the Owens Valley), and bordered by concentrated recreation areas along the western and southern perimeter. The polygon intersects with Coyote North, Coyote Southeast and Tinemaha Inventoried Roadless Areas. There are numerous cherry stem roads and motorized trails throughout the polygon along the edge and in the middle. There are six private land inholdings in the middle of the polygon. Southern California Edison operates a diversion at Green Creek. There may be a pipeline from Green Creek. There are seventeen water rights within the polygon. There is an important mountain bike route (on old non-system road) that connects through this polygon from Road 31E305. There are mountain bike trails leading into Big Pine Canyon. This area may be used for tribal traditional purposes (Paiute Mountain School). There are special uses authorized including outfitter guides (packer and mountain guides), as well as livestock grazing and improvements in the area.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 21,951 acres. Ecological groups with less than 15 percent of their national extent in the National Wilderness Preservation System comprise an additional 22,271 acres. Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized

motorized trails within the center polygon; three large authorized forest system roads cherry stem the borders of the polygon in the northern, southern and eastern portions; a high use paved road along the western boundary. The sights and sounds from the authorized motorized trails, forest system roads and paved road likely penetrate much of the polygon. There are developments related to historic mining activity, range improvements, and a landing strip that is still evident on the ground. There are general tribal concerns regarding tribal access and use. There is not an opportunity to reshape the polygon.

Polygon 1147 (Pine Creek East)

General Description

Polygon 1147 (Pine Creek East) consists of 1,351 acres with elevations ranging from 7,200 to over 10,000 feet. It is contiguous with the John Muir Wilderness along the eastern and northern boundaries and is located in Pine Creek (Figure B-7, Inyo National Forest evaluation map E), in the vicinity of Pine Creek Mine, which was one of the largest producers of tungsten in the nation by the 1940s. This polygon is shaped by the paved road, Pine Creek Mine and patented mining claims (private land in Morgan Canyon).

National Vegetation Classification System data indicates 22 percent of the polygon (296 acres) consists of an ecological group, inter-mountain basins big sagebrush shrubland that has less than 10 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include sagebrush and subalpine forest. The area includes steep, rock/talus slopes with sparse vegetation. There are extremely steep rocky canyon walls with loose scree slopes between sheer ridges and rock walls. The air quality is excellent. Perennial stream channels include Morgan Creek and Pine Creek, tailings ponds have limited hydrologic function of the creek. The area intersects with Wheeler Ridge Inventoried Roadless Area and is an important Sierra Nevada bighorn sheep lambing area. This area is located adjacent to a paved road and a developed mining site. The evidence of mining activity is substantially noticeable, including an old town site, portal, mill remains, powder magazine building, roads, platforms, towers, mining debris, and tailing piles. Tram towers and other mining structures are in various places along Morgan Creek. The Pine Creek mining complex operators indicate they have re-vegetated mine areas that may be within this polygon with a grass seed mix designed by California Department of Fish and Wildlife to provide feed for Sierra Nevada bighorn sheep. Included in the area are introduced trout, maintained by fish stocking, but also self-reproducing. There are reduced frog populations due to the trout. Stocked fish do not allow for connectivity of isolated frog populations. There is a mapped meadow on Morgan Creek.

Opportunities for Solitude or Primitive and Unconfined Recreation

The polygon is near Pine Creek Road, a paved road that provides access to Pine Creek Trailhead and pack station. There is a four wheel drive trail along Morgan Creek that provides access to patented mining claims (private land). The opportunity for solitude is degraded by these features. The area receives a moderate amount of recreation use in the summer months, with very little use in the winter. Climbing in the crags in the southern and eastern parts of the area is a popular activity and occurs year around. The area also is a popular viewing area for Sierra Nevada bighorn sheep, particularly in the winter and spring.

Other Features of Value

The polygon includes habitat for Yosemite toads, with some occupied habitat. Within the area are Sierra Nevada bighorn sheep, including a popular viewing area. There is outstanding geologic scenery including towering rock walls that provide a spectacular setting.

Manageability

The area is contiguous with an existing wilderness area (John Muir Wilderness) along the northern and eastern boundaries. The southern boundary of the polygon is Pine Creek Road, and there are patented mining claims and private land in Morgan Canyon, along the western boundary of the polygon. There is a four wheel drive road in Morgan Canyon to access the patented mining claims. There is also a private inholding at the end of Pine Creek Road (Pine Creek Mine). These features are substantially noticeable, impacting manageability of the area for wilderness characteristics. The existing wilderness boundary was drawn to exclude these features. The area contains designated critical habitat for Sierra Nevada bighorn sheep, which may require management activities under the Endangered Species Act. This polygon includes extremely important lambing areas for Sierra Nevada bighorn sheep. Extensive climbing, including commercially guided, occurs in this area. There are many fixed climbing anchors, mostly placed with power drills.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to a paved road along the eastern boundary, and an authorized forest system road and private land road to the south and west of this small polygon. There is substantial departure from appearance of naturalness due to mining activity that is visible from approximately 50 percent of the area, including a patented tungsten mine located to the south and west; with highly visible and intrusive human materials in and adjacent to the polygon, including several buildings, a road network, culvert pipes and equipment, some of which may need costly rehabilitation. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. There is not an opportunity to reshape this polygon.

Polygon 1148 (Pine Creek West)

General Description

Polygon 1148 (Pine Creek West) consists of 1,756 acres with elevations ranging from 8,000 to 13,000 feet. It is contiguous with the John Muir Wilderness along the western and southern boundaries and is located in Pine Creek, in the vicinity of Pine Creek Mine, Pine Creek Trailhead, and Pine Creek Pack Station (Figure B-7, Inyo National Forest evaluation map E). The polygon is shaped by Pine Creek Road (including trailheads and pack station), private land with a patented mining claim, a four wheel drive road along Morgan Creek, and an existing wilderness boundary.

National Vegetation Classification System data indicates 8 percent of the polygon (136 acres) consists of two ecological groups, inter-mountain basins big sagebrush shrubland, and Great Basin foothill and lower montane riparian woodland and shrubland, which have less than 10 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The terrain is steep with talus slopes and alpine vegetation. Ecosystem types include red fir and subalpine forest. Perennial stream channels include Morgan Creek and Pine Creek. There is riparian vegetation throughout the area, although the tailings ponds have limited riparian vegetation on Pine Creek. The polygon intersects with Wheeler Ridge and Horton Inventoried Roadless Areas. There has been extensive mining activity in the area. There are no known invasive plant species present. Trout were introduced and are maintained by fish stocking and are self-reproducing. Stocked fish do not allow for connectivity of isolated frog populations. There is evidence of mining activity that is substantially noticeable from the majority of the area; including roads, platforms, towers and mining debris. Tram towers and other mining structures are in various places along Morgan Creek. The Pine Creek mining complex operators have reportedly re-vegetated mine areas that may be within this polygon with a grass seed mix designed by California Department of Fish and Wildlife to provide feed for Sierra Nevada bighorn sheep. Mining activity has likely resulted in some water quality impairment; however, it is not State-listed as impaired or threatened. Tailings ponds have limited hydrologic function of Pine Creek. There is a mapped meadow on Morgan Creek. The air quality is excellent.

Opportunities for Solitude or Primitive and Unconfined Recreation

The polygon is near Pine Creek Road, which is a paved road that provides access to Pine Creek Trailhead and pack station. There is a four wheel drive trail along Morgan Creek that provides access to patented mining claims (private land). There are designated trails in the area, including trails to Gable Lakes and Pine Lake that receive low to moderate use.

Other Features of Value

The area is a habitat for Yosemite toads, with some occupied habitat.

Manageability

The area is contiguous with the existing John Muir Wilderness area, along the north, west and southern boundaries. Pine Creek Road, trailheads and a pack station are in the southeastern corner of the polygon. There is private land (patented tungsten mining claims) and a four wheel drive road in Morgan Canyon, along the eastern boundary of the polygon. There is also a private inholding at the end of Pine Creek Road (Pine Creek Mine). These features substantially limit the appearance of naturalness. The existing wilderness boundary was drawn to exclude these features.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There is substantial departure from appearance of naturalness due to mining activity that is visible from the majority of this small polygon, including a patented tungsten mine, several buildings, a road network, culvert pipes and equipment. Some of the mining structures may need rehabilitation requiring mechanized tools. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. The opportunity for solitude or primitive and unconfined recreation is limited due to proximity to roads, Pine Creek Mine and a four wheel drive trail that provides access to patented mining claims (private land). There is not an opportunity to reshape this polygon.

Polygon 1154 (Rock Creek East and Sand Canyon)

General Description

Polygon 1154 (Rock Creek and Sand Canyon) consists of 5,243 acres with elevations ranging from 7,000 to 10,000 feet. It is contiguous with the John Muir Wilderness along the eastern and southern boundaries. It is located along the east side of the Rock Creek Recreation Area and in the vicinity of Swall Meadows, a private community located to the east (Figure B-6, Inyo National Forest evaluation map D). It is shaped like a horseshoe, as it follows the existing wilderness boundary.

National Vegetation Classification System data indicates 10 percent of the polygon (537 acres) consists of two ecological groups, inter-mountain basins big sagebrush shrubland, and Great Basin foothill and lower montane riparian woodland and shrubland, which have less than 10 percent of its national extent protected in the National Wilderness Preservation System. An additional 2,100 acres consists of Great Basin pinyon-juniper woodland and Rocky Mountain aspen forest and woodland, which have less than 15 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area is along the eastern escarpment of Wheeler Crest with steep slopes. Ecosystem types include mountain mahogany, pinyon-juniper, sagebrush, and subalpine forest. At lower elevations, open shrublands dominating the moraines contain scattered pockets of aspen that add to the diversity of the landscape. Perennial stream channels include Rock Creek and Birch Creek. There are intermittent stream channels from Wheeler Ridge. The polygon intersects with a small portion of the Rock Creek West and Wheeler Ridge Inventoried Roadless Areas, south of Swall Meadows. The east border of the eastern portion of the horseshoe is adjacent to private land communities. There are introduced trout, maintained by fish stocking and self-reproducing. Stocked fish do not allow for connectivity of isolated frog populations. Soils are in desired condition. Part of Ainslee Meadow is in this polygon. There is riparian vegetation associated with a high ground water table and in canyons. There is a special use permit issued to Rock Creek Lake Resort for a small Federal Energy Regulatory Commission hydro project. Public comments indicate there are trails used by mountain bikers in the Sand Canyon area. The area is partially within the 2002 Birch Fire Area.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography has steep slopes with mostly open forests, so screening is limited. Within the west and north ends of the horseshoe-shaped polygon there is a network of authorized motorized trails. The west is bordered by a paved road that includes concentrated recreation areas (Rock Creek) with campgrounds, trailheads, picnic areas, and resorts. The portion on eastside of the polygon that does not contain authorized motorized trails is located is bordered by the communities of Swall Meadows and Paradise, and within 1-2 miles of old Highway 395 (east of the area). The area receives year round recreation use, with higher use during the summer months focused around the developed recreation facilities in Rock Creek, as well as Wheeler four wheel drive trail, mountain biking in Sand Canyon and climbing activity on granite crags. During the winter months, there is some cross-country skiing that occurs, including recreation use associated with Rock Creek Resort, which is open year round. The proximity to communities, concentrated recreation area and motorized trails limits the opportunities for solitude or primitive and unconfined recreation.

Other Features of Value

Within the polygon there may be rare springsnails in spring habitat and Sierra Nevada Bighorn Sheep. It also contains water birch (riparian community tracked by California Fish and Wildlife). There are views of Owens Valley, Volcanic Table lands and White Mountains. No cultural resources are known, but archaeological remains and ruins associated with historic and prehistoric occupation may exist.

Manageability

The area is contiguous with the John Muir Wilderness, and is in proximity to a concentrated recreation area with developed facilities (campgrounds, hiking trails and trailheads, and resorts), motorized trails, and communities. The existing wilderness boundary was drawn to exclude these features. The area contains habitat for listed species, including Sierra Nevada yellow-legged frog, Yosemite Toad, and Sierra Nevada bighorn sheep, which may require management activities under the Endangered Species Act. There is one water right in the area. There is small Federal Energy Regulatory Commission hydro project that is under special use permit with Rock Creek Resort.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to the presence of authorized motorized trails within the polygon, and a paved road with highly developed recreation sites along the western perimeter; sights and sounds would likely penetrate this small polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 537 acres. Ecological groups with less than 15 percent of their national extent in the National Wilderness Preservation System comprise an additional 2,100 acres. The polygon cannot be reshaped.

Polygon 1155 (Rock Creek West)

General Description

Polygon 1155 (Rock Creek West) consists of 3,498 acres ranging in elevation from 7,600 to 9,600 feet. It is contiguous with the John Muir Wilderness along the western and southern boundaries and is located along the west side of the Rock Creek Recreation Area and in the vicinity of Aspen Springs and Toms Place (private communities located to the north) (Figure B-6, Inyo National Forest evaluation map D). The polygon is elongated and narrow, between Rock Creek Road and the wilderness boundary.

National Vegetation Classification System data indicates 3 percent of the polygon (112 acres) consists of two ecological groups, inter-mountain basins big sagebrush shrubland, and Great Basin foothill and lower montane riparian woodland and shrubland, which have less than 10 percent of its national extent protected in the National Wilderness Preservation System. An additional 1,100 acres consists of Great Basin pinyon-juniper woodland and Rocky Mountain aspen forest and woodland, which have less than 15 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area includes steep slopes above Rock Creek Canyon with mostly open forests. Ecosystem types include Jeffrey pine, pinyon-juniper, subalpine and alpine forest. There are unnamed perennial stream channels throughout this area, as well as numerous intermittent channels. It intersects with the Rock Creek West Inventoried Roadless Area. No invasive plants species are documented. There are introduced trout, maintained by fish stocking and self-reproducing. Stocked fish affect connectivity of isolated frog populations. The area is located adjacent to a residential community which has led to habituation of wildlife, such as black bears. The condition of riparian areas and meadows is unknown. The air quality is excellent. The area is largely unsurveyed for cultural resources, but it contains prehistoric and historic sites including prehistoric lithic scatter and a multicomponent site with lithics, historic refuse, and a partially dismantled log cabin.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography has steep slopes above Rock Creek Canyon with limited screening. The area is located in the vicinity of a concentrated recreation area (Rock Creek), which has a paved forest highway, campgrounds, trailheads and picnic areas, a pack station and resorts along the eastern boundary. The northern boundary borders private communities in Little Round Valley, including Aspen Springs and Toms Place. Highway 395 is in the vicinity of the northern boundary. Sounds from vehicles, campgrounds and other developed recreation features, highways and communities would be present in most locations in the area. The area receives year round recreation use, with higher use during the summer months focused around the developed recreation facilities in Rock Creek. During the winter months, there is some cross-country skiing and recreation use associated with Rock Creek Resort. The lower portion of Rock Creek Road to the Sno-Park is plowed in winter. The existing wilderness boundary is currently drawn to exclude these features.

Other Features of Value

The entire area has outstanding views of high peaks in Rock Creek and many lakes, as well as outstanding examples of glacial moraines and large Sierra junipers. The area contains habitat for listed species, including Sierra Nevada yellow-legged frog, Yosemite toad, and Sierra Nevada bighorn sheep.

Manageability

The polygon is an elongated, narrow strip that mostly parallels Rock Creek Road (paved forest highway) along the eastern boundary. The western and southern boundary is contiguous with the John Muir Wilderness. The polygon is in proximity to concentrated recreation areas with developed facilities (campgrounds, hiking trails and trailheads and resorts), residential communities, a paved forest road and Highway 395. There are nine existing water rights in the area; there is a small hydropower development operating under an existing special use permit that includes use of motorized tools and motorized access.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to a paved road along the eastern and northern borders with highly developed recreation areas; sights and sounds would likely penetrate this small elongated polygon. The polygon is in proximity to developments such as recreation facilities. Fish stocking that altered native aquatic assemblages. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in

the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 112 acres. Ecological groups with less than 15 percent of their national extent in the National Wilderness Preservation System comprise an additional 1,100 acres. The polygon cannot be reshaped.

Polygon 1156 (McGee Creek)

General Description

Polygon 1156 (McGee Creek) consists of 5,129 acres with elevations ranging from 7,400 to over 10,500 feet. It is contiguous with the John Muir Wilderness along the southern boundary and is located southwest of Crowley Lake and Highway 395, extending north and west of McGee Creek and south of Lower Hilton Lakes Trailhead (Figure B-6, Inyo National Forest evaluation map D). It includes McGee Mountain at 10,871 feet in elevation. The polygon has three segments due roads that protrude into the area.

National Vegetation Classification System data indicates 24 percent of the polygon (1,236 acres) consists of two ecological groups, inter-mountain basins big sagebrush shrubland, and Great Basin foothill and lower montane riparian woodland and shrubland, which have less than 10 percent of its national extent protected in the National Wilderness Preservation System. An additional 1,700 acres consists of Great Basin pinyon-juniper woodland and Rocky Mountain aspen forest and woodland, which have less than 15 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area is mostly steep open slopes along McGee Mountain above the low-angled alluvial run-out toward Crowley Lake. Ecosystem types include mountain mahogany, pinyon-juniper, sagebrush, and subalpine forest. There are open shrublands and forests. The area contains perennial stream channels such as Hilton Creek, McGee Creek and Whisky Creek. Hilton Creek is on the state list of impaired or threatened streams for dissolved oxygen. No mapped meadows are present. The air quality is excellent. Invasive plant species occur in the area; cheatgrass is expanding. The majority of polygon intersects with Nevahbe Ridge, Laurel Mcgee and Whisky Creek Inventoried Roadless Areas. Sheep grazed the area up until five years ago but the allotments are now closed. The area is located adjacent to a residential community which has led to habituation of wildlife, such as black bears.

There is a county television translator installation near McGee Mountain with infrequent access using the Tobacco Flat Road. The former McGee Mountain Ski Tow Site consists of the remains of three rope tows, including fallen poles with pulleys and rope guards attached, rope remnants (one rope along the route of the tow), and remains of tows or platforms located at the top of the three routes. Wooden remains from the structures built to house the tow motors are located at the tops of Rope Tow 1 and 2.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography of this polygon has mostly steep, open slopes along McGee Mountain above low-angled alluvial run-out toward Crowley Lake, with visibility to recreation activities, development, and roads and highways. It includes open forests and shrublands, so screening is limited. There are many developments in the vicinity of the area, including campgrounds and trailheads (Bureau of Land Management and Forest Service), and old Highway 395 and current Highway 395 just

northeast of area. There is a four wheel drive road along the northwest boundary. A paved forest highway in McGee Creek, which provides access to a pack station and trailhead, is cherry stemmed into the area nearly splitting it in half. Noise from these developments would be present from most locations in the area. The potential for encounters with other visitors is high, particularly in the lower and eastern sides. There is a lower potential for encounters on McGee Mountain. The area has higher use during the summer, but it is also popular for winter motorized recreation in the winter. There is a heli-ski competition that has been authorized under special use permit on McGee Mountain. There is a hang gliding launch in the McGee Mountain area (Road 4S47), and there is some mountain bike use on routes along the eastern side of area. The area likely provides some opportunities for primitive-type recreation activities, including cross-country hiking, cross-country skiing, and general forest exploration with some degree of challenge. Opportunities for

Other Features of Value

The area has designated sage grouse habitat and Sierra Nevada bighorn sheep critical habitat. It contains water birch (riparian community tracked by California Fish and Wildlife) and views of Crowley Basin.

Manageability

The polygon parallels Highway 395 along the northeastern boundary and the existing wilderness boundary along the southern edge. There are paved and other forest system roads that cherry stem the polygon, nearly splitting it into three sections. The polygon is in proximity to high use recreation developments and activities, residential communities, roads and Highway 395. Existing uses that occur in the area include motorized winter recreation, mountain biking, pack station, authorized pastures, non-wilderness day rides, hang gliding launch near McGee Mountain, and a heli-ski competition that has been authorized under special use permit. There is also a county television translator installation near McGee Mountain under special use permit. The area is currently within the wildland-urban interface. The area contains habitat for listed species, including Sierra Nevada bighorn sheep which may require management activities under the Endangered Species Act The area also contains priority habitat for sage grouse. There are three water rights in the area.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to US Highway 395, Crowley Lake residential community, an extensive network of authorized forest system roads and highly developed recreation facilities along the perimeter of this polygon; some authorized forest system roads (including a paved road) nearly split the polygon into three sections. Sight and sounds would likely penetrate most of the polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 1,236 acres. Ecological groups with less than 15 percent of their national extent in the National Wilderness Preservation System comprise an additional 1,700 acres. The location of the roads, developments, and the forest boundary do not allow the polygon to be reshaped.

Polygon 1159 (Mammoth Escarpment–Lakes Basin, Sherwin Creek, Laurel Creek and Convict Lake)

General Description

Polygon 1159 (Mammoth Escarpment-Lakes Basin, Sherwin Creek, Laurel Creek and Convict Lake) consists of 14,833 acres with elevations ranging from 7,500 to over 10,000 feet. It is contiguous with the John Muir Wilderness along the western and southern boundaries and is located along the Sierra Nevada escarpment southwest of Mammoth Lakes to southeast of Convict Lake (Figure B-6. Inyo National Forest evaluation map D).

National Vegetation Classification System data indicates 11 percent of the polygon (1,664 acres) consists of ecological groups that have less than 10 percent of its national extent protected in the National Wilderness Preservation System. The most prevalent group is inter-mountain basins big sagebrush shrubland. An additional 2,200 acres consists of Great Basin pinyon-juniper woodland and Rocky Mountain aspen forest and woodland, which have less than 15 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The Mammoth Escarpment rises from gentle slopes of sagebrush-bitterbrush to very steep, often precipitous terrain. Ecosystem types include alpine, Jeffrey pine, mountain mahogany, pinyon-juniper, red fir, sagebrush and subalpine forest. At lower elevations, open shrublands dominating the moraines contain scattered pockets of aspen that add to the diversity of the landscape. There are many perennial streams in the area such as Mammoth Creek, Sherwin Creek, Laurel Creek and streams in the Lakes Basin between the lakes. Mammoth Creek is on the state list of impaired or threatened water bodies for metals below this area. There are some intermittent stream channels. It includes the Lakes Basin, Sherwin Lakes, Laurel Lakes and Convict Lake. Air quality is nonattainment for pm10 (Mammoth pm10 planning area). Several mapped meadows are present and there is riparian vegetation throughout the area. The majority of the polygon intersects with the Laurel McGee, San Joaquin and Sherwin Inventoried Roadless Areas.

There may be some localized impacts to soil conditions related to concentrated recreation use, legacy mining, grazing activities and historic logging. There are two cattle allotments in the lower elevation areas. There are very few invasive plant species (stable trend) in most areas; within the Lakes Basin, there are a variety of invasive plant species that are stable to increasing. There are introduced trout, maintained by fish stocking and self-reproducing. Stocked fish impact connectivity of isolated frog populations. There are areas of dense forest due to fire suppression, particularly in areas close to communities, recreation developments, and the domestic water supply infrastructure for the Town of Mammoth Lakes. Fuels reduction work is currently being planned to enhance wildfire defensible space around developments and to create a strategic fuel break near Mammoth Pass.

Other noticeable developments include a Los Angeles Department of Water and Power Snow Survey Course with associated improvements in the Mammoth Pass area, United States Geological Survey installations in the Laurel Pond and Mammoth Pass areas and historic mining activity (i.e., old railroad cars, buildings, adits, roads, trails and tailing piles). About a quarter of the area has been surveyed for cultural resources, with roughly 40 documented cultural resource sites, primarily prehistoric sites with lithic scatters, isolated artifacts and an extensive prehistoric village site. The major paved roads and highly developed sites in a portion of the area have led to fragmented habitat and habituation of wildlife such as bears and small mammals. Evidence of

civilization includes the Town of Mammoth Lakes, Mammoth Airport and Highway 395. Other portions of the polygon are less impacted by development and roads.

Public comments indicate Solitude Canyon is an area with a diverse conifer forest. Public comments indicate there is a network of front-country trails used by mountain bikers in this area, including Mammoth Rock, Laurel Canyon and trails in the Lakes Basin.

Opportunities for Solitude or Primitive and Unconfined Recreation

Topography is variable, but includes some steep slopes. There are mostly open views to Long Valley and Mammoth Lakes. Within the Lakes Basin, there is screening from large trees. There are many developments in the vicinity of the area, including developed recreation facilities and concentrated recreation use, paved roads and highways (including Highway 395 just north of area in the eastern portion of the polygon), and the Town of Mammoth Lakes with homes and businesses prominent. There is a motorized trail, which accesses Laurel Lakes (four wheel drive experience and popular dispersed camping destination) and nearly splits the polygon. There is also a motorized trail that nearly bisects the polygon near Convict Lake. Several paved forest highways (Lakes Basin and Convict Lake) cherry stem the polygon. Opportunities for solitude or primitive and unconfined recreation are limited in many locations, due to sight and sounds from developed use. The potential for encounters with other visitors is high. It is extremely high during summer months, especially adjacent to Mammoth Lakes Basin, Convict Lake, and system trails in Sherwin Creek. The area is also popular for winter recreation, including over snow vehicles, cross-country skiing and backcountry skiing. There is winter backcountry and over-snow vehicle use in the Sherwin Bowls area and at the base of the escarpment. Several public comments indicate Solitude Canyon as an area with opportunities for solitude or primitive and unconfined recreation.

Other Features of Value

The area includes Yosemite toad, Yuba Pass willow (sensitive species), Sierra Nevada bighorn sheep designated critical habitat, and sage grouse habitat. The upper watershed supplies water for Town of Mammoth Lakes. The area's mixed carbonate and granitic geology create unique geologic and ecological diversity.

Manageability

The polygon includes four distinct geographic locations. Lakes Basin (western portion of the polygon) is in the vicinity of a concentrated recreation area with substantial developments (campgrounds, trailheads and hiking trails, paved bike trails, boat ramps, resorts, pack stations, and recreation residences). In 2010, a community-driven collaborative planning effort was completed for the Lakes Basin, called the Lakes Basin Special Study (LABSS). The LABSS provided recommendations for potential additional recreation development including expanding the multi-use path that runs through the Basin. The Sherwin Creek area (western half of the polygon, east of Lakes Basin), located south of the Town of Mammoth Lakes, has fewer recreation developments (campground, trailhead and hiking trail, organization camps) and less concentrated recreation use. In 2010, a community-based collaborative planning effort produced the Sherwins Area Recreation Plan. The document identified the potential for trail enhancement and development in the Sherwins Area to include additional motorized access, mountain-bike trails, equestrian and hiking trails, including multi-use paths. The Laurel Lakes area on the eastern half of the polygon, between Sherwin Creek is less developed, with the recreation use focused on the motorized trail that provides access to Laurel Lakes, which is popular for dispersed camping. The Convict Lake area (eastern portion of the polygon) is in proximity to a

concentrated recreation area with developments (campground, trailhead and hiking trail, resort and boat ramp).

There is a private land inholding (Mammoth Consolidated Mine) on the western side of the polygon near the Lakes Basin, along Mammoth Creek. Existing uses within the polygon or in the vicinity include campgrounds, system trails and trailheads, authorized motorized trails, mountain biking, boating and fishing, resorts, pack stations, guided fishing, motorized trails, motorized winter recreation, dispersed camping, cross-country and backcountry skiing, organization camps, grazing, community water systems, and Forest Service water systems. Both motorized uses (off highway vehicles and over snow vehicles) and mountain biking are popular activities in the area. There are existing vegetation treatments and maintenance treatments, as well as planned treatments. The area contains habitat for listed species, including Yosemite toad, and Sierra Nevada bighorn sheep, which may require management activities under the Endangered Species Act. The area contains sage grouse priority habitat. There are seventeen existing water rights in the area.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The polygon has or is in proximity to substantial developments and improvements, including campgrounds, trailheads, resorts, boat ramps, pack station, recreation residences, private land communities, motorized trails, roads and highways. Opportunities for solitude or primitive and unconfined recreation are limited: due to an extensive network of authorized motorized trails within the polygon, including those that split the polygon; due to the many authorized forest system roads that cherry stem to nearly split other sections of this polygon; and areas adjacent to highly developed recreation areas, recreation residences, and developed communities. Sights and sounds from roads and highly developed recreation areas would likely penetrate a large portion of the polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 1,664 acres. Ecological groups with less than 15 percent of their national extent in the National Wilderness Preservation System comprise an additional 2,200 acres. It is difficult to reshape the polygon.

Polygon 1161 (Reds Meadow)

General Description

Polygon 1161 (Reds Meadow) consists of 1,656 acres ranging in elevation from 7,500 to 9,000 feet. It is contiguous with the John Muir Wilderness along the southern and eastern boundaries (Figure B-6, Inyo National Forest evaluation map D). It is located on the back side of Mammoth Mountain Ski Area, west of the Town of Mammoth Lakes. This is a concentrated recreation area that includes developed campgrounds, trailheads, pack stations and access to Devils Postpile National Monument. It is a narrow and elongated polygon, which encompasses the narrow buffer left between areas of concentrated recreation use and development and areas of prior wilderness designation. Ecosystem types include red fir and sagebrush. The Pacific Crest National Scenic Trail goes through the southwest corner of the polygon, near Rainbow Falls. U-shaped valleys, steep precipitous slopes, and basaltic outcrops characterize the area. This place is predominantly mid-elevation to high elevation red fir forest. It includes the headwaters of the Middle Fork of the San Joaquin River.

National Vegetation Classification System data indicates less than 1 percent of the polygon (4 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The majority of the polygon intersects with the San Joaquin Inventoried Roadless Area. Developments within the polygon are historic sites, including Reds Meadow Ranger Station. The vegetation is dense in many areas due to fire suppression; past and future hazardous fuels reduction work is to enhance wildfire defensible space around developments and to create a fuel break along the narrow, one way in and out access road. This polygon includes developed campgrounds and trailheads, and is adjacent to a major paved road. There is some habitat fragmentation and habituation of wildlife such as bears and small mammals. There are a few invasive plant species, including cheatgrass. There are introduced trout, maintained by fish stocking and self-reproducing. Stocked fish affect connectivity of isolated frog populations. Public comments indicate there are trails in the area used by mountain bikers.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography is valley with surrounding slopes. There is some screening from mid-elevation red fir forest. This area is the narrow buffer left between areas of concentrated recreation use and developments, and areas of designated wilderness. There are many developments in the vicinity, including campgrounds, day use sites, trailheads, resorts, pack stations, a paved road, and a National Park Service ranger station with employee housing. Noise from these developments would be present from most locations in the area; the Reds Meadow Valley may see nearly 2,000 visitors per day during the peak summer season, limiting the opportunity for solitude or primitive and unconfined recreation. The potential for encounters with other visitors is high, particularly during the summer months. The road is seasonally closed and infrequently used by snowmobiles during the winter months.

Other Features of Value

The polygon includes a northern goshawk breeding area, the rare plant Robbins pondweed and the sensitive plant, short-leaved hulsea. There are outstanding features located adjacent to but not within the area and protected by other special designations (e.g., Minaret Falls in Ansel Adams Wilderness and columnar basalt formations in the Devils Postpile National Monument).

Approximately half of the area was surveyed for cultural resources, with nine documented cultural resource sites including prehistoric lithic scatters, historic trash scatters, the Red's Meadow Ranger Station, and the Rainbow Falls toilet.

Manageability

The polygon is an elongated, narrow strip that mostly parallels Reds Meadow Road (paved forest road). The western boundary is contiguous with Devils Postpile National Monument, which has campgrounds and day use facilities, as well as a National Park Service ranger station and employee housing. The south and eastern boundary is contiguous with the existing the Ansel Adams Wilderness. The polygon is in proximity to a concentrated recreation area with developed facilities and a paved forest road. The majority of the polygon intersects with the San Joaquin Inventoried Roadless Area. Fuels reduction work is currently being planned to enhance wildfire defensible space around developments and to create a fuel break along the narrow, one way in and out access road.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The polygon is in proximity to developments, such as recreation facilities (campgrounds, trailheads, pack stations and resort) and paved forest road. Opportunities for solitude or primitive and unconfined recreation are limited due to the high use paved road and highly developed recreation sites; sights and sounds would likely penetrate most of this small polygon. Mechanical fuels management activities may need to continue within the polygon to protect adjacent high value areas. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. The polygon cannot be reshaped.

Polygon 1164
(Minaret Vista and San Joaquin Four Wheel Drive Trail)

General Description

Polygon 1164 (Minaret Vista and San Joaquin Four Wheel Drive Trail) consists of 1,017 acres ranging in elevation from 8,800 to 10,000 feet. It is contiguous with the Ansel Adams Wilderness along the northern and eastern boundaries. It is located to the northwest of the Mammoth Mountain Ski Area west of the Town of Mammoth Lakes, and northeast of Reds Meadow Road (, Inyo National Forest evaluation map D). The polygon is shaped by the Reds Meadow Road and existing wilderness boundary. It is a narrow and elongated polygon encompassing the narrow buffer left between areas of concentrated recreation use and development and areas of prior wilderness designation.

National Vegetation Classification System data indicates none of the polygon consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include red fir and subalpine forest. There is moderate to high human impact on plant communities. There are few invasive plant species, including some cheatgrass. Vegetation is dense due to fire suppression. The majority of the polygon intersects with the San Joaquin Inventoried Roadless Area, but the area is adjacent to a major paved road and some developed sites that have fragmented habitat, causing wildlife to have to cross the road leading to some mortality. Small mammals are fed by recreationists around developed sites. Public comments indicate there are trails used by mountain bikers in this area.

Opportunities for Solitude or Primitive and Unconfined Recreation

This area is the narrow buffer left between Reds Meadow Road, areas of concentrated recreation use and developments (Minaret Vista and Reds Meadow Information Station), motorized trails (San Joaquin four wheel drive trail) and areas of designated wilderness. Mammoth Mountain Ski Area is in the vicinity. Noise from these developments would be present from most locations in the area. The opportunity for solitude or primitive and unconfined recreation is limited due the proximity to concentrated recreation use and developments in this small polygon.

Other Features of Value

None were noted.

Manageability

The polygon is an elongated, narrow strip that mostly parallels Reds Meadow Road (paved forest road) and includes San Joaquin Four Wheel Drive Trail. The northern boundary is contiguous with existing wilderness (Ansel Adams Wilderness). The polygon is in proximity to a paved forest road, motorized trail within the polygon, and concentrated recreation area with developed facilities. The area is adjacent to communities and there is a need for wildfire defensible space around developments and to create a fuel break along the narrow, one way in and out access road.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The polygon is in proximity to developments, such as recreation facilities and paved forest road. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. There are no ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System in the area. The opportunity for solitude or primitive and unconfined recreation is limited due to the proximity to concentrated recreation use, including motorized trails, winter motorized recreation and mountain biking, and the paved forest road. The location of the road, developments and the forest boundary do not allow the polygon to be reshaped.

Polygon 1179 (Lower Lee Vining Canyon to June Lake Loop)

General Description

Polygon 1179 (Lower Lee Vining Canyon to June Lake Loop) consists of 7,212 acres ranging in elevation from 7,600 to 9,000 feet. It is contiguous with the Ansel Adams Wilderness along the western boundary and is located along the Sierra Nevada escarpment from Lower Lee Vining Canyon to Silver Lake (June Lake Loop) (Figure B-3, Inyo National Forest evaluation map A). The polygon is oddly shaped (elongated vertically from north to south) as it follows the existing wilderness boundary along the western edge and roads and private land parcels protrude into the polygon along the eastern edge. The north half of the polygon intersects with the Horse Meadow Inventory Roadless Area. Ecosystem types include Jeffrey pine, mountain mahogany, pinyon-juniper, red fir, sagebrush, subalpine forest and white fir. It is designated critical habitat for Sierra Nevada bighorn sheep. It includes highly diverse conifer forests and aspen. There are numerous perennial stream channels, such as Walker Creek, Gibbs Creek and Parker Creek.

National Vegetation Classification System data indicates 10 percent of the polygon (734 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. Approximately 3,000 additional acres are comprised of Great Basin pinyon-juniper woodland and Rocky Mountain aspen forest and woodland, which have less than 15 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area has fish stocking (current and historic) as well as fish barriers to keep trout out of frog habitat. Fuels reduction projects are being implemented (understory thinning). The area includes habitat improvement for Sierra Nevada bighorn sheep and sage grouse. There are aspen enhancement projects within the area. There are no open allotments in this area, although there was grazing by sheep in the past.

Fish barriers are necessary to prevent introduced trout from invading frog habitat in upper reaches. These fish barriers may need to be mechanically maintained. There are potentially some Los Angeles Department of Water and Power structures. Walker Lake Dam is in the area.

The mixed conifer forest in the western portion of the polygon includes limber pines in Bloody Canyon. There is some departure of fire from its range of natural variability. There has been minimal human impact to the plant community. The area is very diverse, with low invasive plant species. Some cheatgrass is present and probably increasing. There are no open range allotments in this area, although there was grazing by sheep in the past. Historic and current stocking have altered aquatic assemblages. Stocked trout reside in most of the perennial streams, displacing native invertebrates. Walker Lake is an important fishery for Kamloops. Fish barriers are necessary to prevent introduced trout from invading frog habitat in upper reaches and may need to be mechanically maintained. This area does provide contiguous habitat and connectivity for wildlife, since developments only account for a small portion of the polygon. Public comments indicate an isolated population of southern alligator lizards exists along the Parker Bench trail, and there are goshawk and peregrine falcon nests known to be in the area. There are numerous perennial stream channels such as Walker Creek, Gibbs Creek and Parker Creek. Riparian vegetation is present on perennial channels and other canyons, condition unknown. Numerous meadows are present, but their condition is unknown. The soil quality is likely at the desired condition and air quality is excellent.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography is steep, with many streams or drainages. Screening is minimal in some areas, but there is good screening from topography along the western side of the polygon. This area is the narrow buffer left between areas of concentrated recreation use, private land and areas of designated wilderness. There are developed recreation facilities in Lee Vining Canyon and June Lake Loop. The southern portion of the polygon is located immediately adjacent to Highway 158 (June Lake Loop), and the northern portion is located immediately adjacent to Highway 120. The proximity to concentrated recreation use and highways limits the opportunity for solitude. There may be opportunities for primitive-type recreation activities, including cross-country hiking and general forest exploration.

Other Features of Value

Walker Lake is an important fishery for Kamloops trout. Springs may contain springsnails. The area is a Sierra Nevada bighorn sheep designated critical habitat and houses the rare plant, Robbins pondweed. There are views of Mono Basin and Mono Craters.

Manageability

The polygon is elongated vertically from north to south as it follows the existing wilderness boundary along the western edge and roads and private land parcels protrude into the polygon along the eastern edge, making for an irregularly shaped boundary. The polygon is in proximity to concentrated recreation use and facilities, and highways in the south and north portions of the area. The northern perimeter and southern perimeter overlap with a wildland-urban interface that surrounds recreation developments in Lee Vining Canyon and along the north shore of Silver Lake. The area overlaps a wildland-urban interface and there are needs for wildfire defensible space around developments and access roads. The area contains designated critical habitat for Sierra Nevada bighorn sheep, which may require management activities under the Endangered Species Act. Fish barriers that need to be mechanically maintained are necessary to prevent introduced trout from invading frog (federally listed frog species) habitat in upper reaches. There is existing outfitting and guiding (pack station). The Los Angeles Department of Water and Power

manages lands adjacent to the boundary. Motorized winter recreation is an existing use. There are five water rights in the area.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The wilderness characteristics are affected by fish stocking, fuels reduction activities and habitat improvement projects. There were some developments noted within the area, including Walker Lake Dam, fish barriers and possibly Los Angeles Department of Water and Power infrastructure. The polygon is in proximity to developments, such as recreation facilities, residences and highways. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 734 acres. Ecological groups with less than 15 percent of their national extent in the National Wilderness Preservation System comprise an additional 3,000 acres. The opportunity for solitude is degraded due to the proximity to concentrated recreation use and highways. There may be opportunity for primitive and unconfined recreation. The proximity to concentrated recreation use and facilities and highways would make it difficult to manage for wilderness characteristics, particularly along the northern half and eastern side of the polygon. In addition, existing nonconforming uses, such as winter motorized recreation, occurs in the area.

Polygon 1195
(West of Mono Lake and Highway 395, North of Lee Vining)

General Description

Polygon 1195 (West of Mono Lake and Highway 395, North of Lee Vining) consists of 2,008 acres ranging in elevation from 7,000 to 9,600 feet. It is contiguous with the Ansel Adams Wilderness along the western boundary and is located along the Sierra Nevada escarpment between Lundy Canyon and Lee Vining, and between Highway 395 and the wilderness boundary (Figure B-3, Inyo National Forest evaluation map A). The polygon is shaped (elongated vertically from north to south) by the existing wilderness boundary along the western edge and private land parcels along the eastern edge. The eastern edge is within one mile of Highway 395.

National Vegetation Classification System data indicates 21 percent of the polygon (414 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. Approximately 1,000 additional acres are comprised of Great Basin pinyon-juniper woodland and Rocky Mountain aspen forest and woodland, which have less than 15 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include mountain mahogany, pinyon-juniper, sagebrush, and subalpine forest. The area is within the Mono Basin National Forest Scenic Area. It includes steep terrain along the escarpment that overlooks the Mono Basin and Highway 395. About half of the polygon intersects with Log Cabin Saddlebag Inventoried Roadless Area. There are numerous ephemeral and intermittent stream channels with riparian vegetation. There are no mapped meadows in the area. Soils are likely at the desired condition due to limited management activities in this area. This area is within the Mono Basin PM-10 nonattainment area for air quality.

Pinyon pine forests have expanded due to fire suppression. There are some invasive plant species, including cheatgrass. Stocked trout reside in most of the perennial streams, displacing native aquatic organisms. There are a few developments within the area, including Highway 395, avalanche control infrastructure for Highway 395, residential communities and developments within Mono Basin. Public comments indicate there is an important connecting trail used by mountain bikers in the corridor between Mono Lake and the Hoover Wilderness. It is not certain, however, if the trail is located within the polygon boundary.

Opportunities for Solitude or Primitive and Unconfined Recreation

Within this polygon, the topography is steep terrain along the escarpment that overlooks Highway 395 and Mono Lake. There is very little screening with Mono Lake and residential communities visible. The proximity to the highway limits the opportunity for solitude as the highway can be seen and heard from much of the area.

Other Features of Value

The area features great views of Mono Basin and across to the White Mountains. It contains unique meta-sedimentary rocks ("rooftop pendant"). The area is largely unsurveyed for cultural resources but there is one known prehistoric lithic scatter site.

Manageability

The polygon is in proximity to the highway and adjacent to recreation developments and private land inholdings. There is avalanche control infrastructure in the area.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to proximity to US Highway 395. Sight and sounds may penetrate most of the small polygon. The area is an avalanche control zone for Cal Trans to address safety concerns along the highway. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 414 acres. Ecological groups with less than 15 percent of their national extent in the National Wilderness Preservation System comprise an additional 1,000 acres. The polygon cannot be reshaped.

Polygon 1208 (Saddlebag Lake)

General Description

Polygon 1208 (Saddlebag Lake) consists of 2,516 acres ranging in elevation from 10,000 to 10,800 feet. It is contiguous with the Hoover Wilderness and is located north of Highway 120 and includes Saddlebag Lake (Figure B-3, Inyo National Forest evaluation map A). The polygon is shaped (elongated from north to south) be the designated wilderness boundary (which excludes the recreation developments) along the west, north and eastern edge. The southern edge is Highway 120, just outside the entrance to Yosemite National Park.

National Vegetation Classification System data indicates less than 1 percent of the polygon (25 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include alpine, mountain mahogany, red fir, and subalpine forest. There are perennial stream channels present including Lee Vining Creek, and numerous intermittent channels. The majority of the polygon intersects with Hall Natural Area and Log Cabin Saddlebag Inventoried Roadless Areas. Saddlebag Lake is a reservoir with a dam. There is a motorized ferry that operates during the summer months. Other developments in the area include campgrounds, trailheads and resorts. There is fish stocking in the area and fish barriers are necessary to prevent introduced trout from invading frog habitat in upper reaches. The Bennettville – Great Sierra Mine is located in the southern portion of the polygon and is likely substantially noticeable. The area is largely unsurveyed for cultural resources. In addition to the large mining center, the sites include the remains of a historic sawmill and a historic cabin on the north side of Saddlebag Lake. There is a developed spring for water on the east side of lake. There are several trails used by mountain bikers in the area around the lake.

Stocked trout reside in most of the perennial streams, displacing native invertebrates. Fish barriers are necessary to prevent introduced trout from invading frog habitat in upper reaches. These may need to be mechanically maintained. Toad habitat has been disrupted from heavy recreation use in area. This area does provide for connectivity, but disturbances from the presence of developed areas may limit the amount of movement for some wildlife species. The area has developed campgrounds, trailheads and resorts located throughout the area. This has led to some habitat fragmentation, disturbances and habituation of some wildlife species. There are perennial stream channels present including Lee Vining Creek, and numerous intermittent channels. Numerous meadows are present. There are user trails through meadows west of Saddlebag Lake. There are effects from upstream water manipulation. The air quality is excellent.

Opportunities for Solitude or Primitive and Unconfined Recreation

This area is the narrow buffer left between areas of concentrated recreation use and developments and areas of designated wilderness. There are many developments in the vicinity of the area, including campgrounds, day use sites, trailheads and a resort. Noise from these developments would be present from most locations in the area. Potential for encounters with other visitors is high during the summer months. Opportunities for solitude or primitive and unconfined recreation are limited. When Highway 120 is closed during the winter months, the area receives little to no use.

Other Features of Value

The area is a habitat for the Yosemite toad and Sierra Nevada bighorn sheep. Saddlebag Lake lies within the polygon. There is habitat for the sensitive *Botrychium spp.* (moonworts).

Manageability

The polygon is elongated vertically from north to south as it follows the existing wilderness boundary and follows the forest road accessing Saddlebag Lake. The southern boundary follows Highway 120 to the Yosemite National Park boundary at the Tioga entrance station. The polygon is within a concentrated recreation area with campgrounds and day use facilities, trailheads and a resort. The existing wilderness boundary as currently drawn excludes these features. Saddlebag Lake is a reservoir with a dam. There is a motorized ferry that operates during the summer months. There is also an accessible non-motorized trail. The area contains habitat for Yosemite toad and Sierra Nevada bighorn sheep, which may require management activities under the Endangered Species Act. Two water rights are present.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to concentrated recreation developments and use, adjacency to Highway 120, the Tioga Pass entrance to Yosemite National Park, and Saddlebag Lake. There are developments within the area that are substantially noticeable, including developed recreation facilities and mining sites. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Sight and sounds may penetrate most of the small polygon. There is not an opportunity to reshape the polygon.

Polygon 1211 (Lundy Canyon)

General Description

Polygon 1211 (Lundy Canyon) consists of 1,949 acres with elevations ranging from 7,600 to 10,400 feet. It is contiguous with the Hoover Wilderness and is located on the north side of Lundy Lake and Lundy Canyon (Figure B-3, Inyo National Forest evaluation map A). The polygon is oddly shaped (elongated from east to west) as it follows the forest boundary along the north, existing wilderness boundary on the west, and Lundy Canyon Road on the south.

National Vegetation Classification System data indicates 4 percent of the polygon (80 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include mountain mahogany, sagebrush and subalpine forest. It is currently within a wildland-urban interface. Topography is severely steep rocky slopes and gullies. There is little water present, with some ephemeral streams. The majority of polygon intersects with Mt. Olsen and Hoover–Mt. Olsen Inventoried Roadless Areas. There are some invasive plant species, with cheatgrass increasing. There is contiguous habitat and connectivity for Sierra Nevada bighorn sheep. The air quality is excellent. The polygon contains remnants of historic mining. The area is adjacent to a concentrated recreation area and Federal Energy Regulatory Commission infrastructure. Public comments indicate there are trails used by mountain bikers in the area. It is not certain, however, if the trails are located within the polygon boundaries.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography is severely steep rocky slopes and gullies. There is some screening present, with some visibility down to developments in Lundy Canyon. There is southern exposure above a dammed lake and recreational developments. The area is adjacent to a concentrated recreation area and Federal Energy Regulatory Commission infrastructure. Travelers can see and hear evidence of civilization. The area receives a high amount of recreation use during the summer months, with little to no use during the winter months. Potential for encounters with other visitors is low once away from developments on south side. The opportunity for solitude is limited by the proximity to the recreation use at Lundy Lake and the paved forest road. The opportunity for primitive and unconfined recreation is limited by steep terrain.

Other Features of Value

The area is a habitat for Sierra Nevada bighorn sheep and a small portion is within a priority habitat for sage grouse. There are unique metasedimentary rocks ("rooftop pendant") in the area, as well as scenic aspen stands.

Manageability

The polygon is elongated from west to east as it follows the existing wilderness boundary and parallels the paved forest road accessing Lundy Canyon. The polygon is in the vicinity of a concentrated recreation area with campgrounds and day use facilities, as well as Federal Energy Regulatory Commission licensed infrastructure. The existing wilderness boundary as currently drawn excludes these features. The area contains habitat for Sierra Nevada bighorn sheep, which may require management activities under the Endangered Species Act.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to proximity to a paved access road in the southern boundary, and to a highly concentrated, authorized recreation use area. The sight and sounds would likely penetrate most of the polygon. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. There is not an opportunity to reshape the polygon.

Polygon 1232 (Willow Springs)

General Description

Polygon 1232 (Willow Springs) consists of 3,205 acres with elevations ranging from 4,400 to 6,800 feet. It is contiguous with the Inyo Mountain Wilderness, is located east of Mazourka Canyon Road and includes Willow Springs and Bee Springs (Figure B-9, Inyo National Forest evaluation map G). The polygon border follows the existing wilderness boundary on the east and the forest boundary on the west.

National Vegetation Classification System data indicates less than 1 percent of the polygon (4 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper and xeric shrublands and blackbrush. The terrain includes the steep western escarpment of the Inyo Mountains with canyons, steep slopes and drainages. The majority of polygon intersects with Paiute Inventoried Roadless Area. There is an authorized motorized trail that bisects the polygon along the wilderness boundary. Highway 395 and the town of Independence area can be seen in the middle distance (approximately 8 miles west). Mine sites on Bureau of Land Management lands are within a half mile of the western boundary. The area has historic mining found in many areas with mine prospects, tailings, roads, adits and buildings throughout the polygon. These mining features are substantially noticeable. Buildings and trailers are reported to be maintained at Black Eagle Mine. There is some cheatgrass and Russian thistle, but they are not widespread. There are unique desert springs

flowing and in good condition. There have been some areas of historic timber harvest from mines. This area provides some contiguous habitat and connectivity for wildlife.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography is steep western escarpment of the Inyo Mountains with canyons, steep slopes and drainages. There is some screening due to canyons and vegetation. There is a motorized trail, Betty Jumbo Mine Road, along the eastern boundary that parallels the existing wilderness boundary. Opportunities for solitude or primitive and unconfined recreation are limited due to the Betty Jumbo Mine Road, a highly visible authorized motorized trail along the eastern boundary. Sight and sounds of motorized use would likely penetrate most of this small polygon. There are authorized forest system roads that cherry stem a portion of the western boundary. Hikers park off of Betty Jumbo Road, a motorized trail that parallels the wilderness boundary to walk to Winnedumah Paiute Monument. There are some opportunities for primitive recreation such as canyoneering, wildlife observation, spring wildflower observation, photography and exploring old mine sites.

Other Features of Value

The area includes the rare plant Parry's monkey flower and Townsend's big-eared bats (habitat associated with mine adits). There are unique desert springs, flowing and in good condition. This polygon contains the uppermost elevations of the Mojave Desert in this region, with creosote bush and Mojave Desert species, such as *Lycium cooperi*. There are outstanding views toward the Sierra Nevada. Little cultural resource surveying has been completed in the area. The five documented properties are all extensive mining sites (Betty Jumbo Mine, Clifford Mine, Omega Mine, Black Eagle Mine and Alhambra Mine).

Manageability

The polygon has a motorized trail that runs along the wilderness boundary. If this was cherry stemmed, it would isolate the remaining portion of the polygon, disconnecting it from the adjoining wilderness boundary so that it would have a narrow attachment to the existing wilderness. The existing wilderness boundary was drawn to exclude the motorized trail (Betty Jumbo Mine road). There is a network of old mining roads in the area. It would be difficult to prevent vehicle incursions from the Betty Jumbo Road, as well as the network of old mining roads. Off highway vehicle recreation, rock hounding and hunting are the primary uses of the area and adjoining Bureau of Land Management land.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The developments related to mining activity are widespread and substantially noticeable. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. The opportunity for solitude or primitive and unconfined recreation is limited due to the proximity to motorized recreation (authorized motorized trails and Mazourka Canyon Road). There is not an opportunity to reshape the polygon to make it more manageable. There are general tribal concerns regarding tribal access and use.

Polygon 1236 (West of Inyo Mountains Wilderness)

General Description

Polygon 1236 (West of Inyo Mountains Wilderness) consists of 73,128 acres with elevations ranging from 4,400 to 9,500 feet. It is contiguous with the Inyo Mountains Wilderness and is located west of the Inyo Mountains Wilderness, between Eureka Valley Road and Mazourka Canyon, and includes Harkless Flat, Andrews Mountain, Mazourka Peak, and Santa Rita Spring. It is a large polygon on the west side of the Inyo Mountains Wilderness between Eureka Valley Road on the north and Mazourka Canyon on the south (Figure B-8, Inyo evaluation map F and Figure B-9 evaluation map G).

National Vegetation Classification System data indicates 44 percent of the area of the polygon (32,500 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are Inter-Mountain big sagebrush shrubland, inter-mountain basins montane sagebrush steppe, inter-mountain basins mixed salt desert scrub and Great Basin xeric mixed sagebrush shrubland. An additional 26,000 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its total national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper, sagebrush, subalpine forest, xeric shrublands and blackbrush. The topography includes the steep western escarpment of the Inyo Mountains, with steep slopes, canyons, extremely rugged terrain; and high elevation desert plateaus with steep to gentle slopes along the eastern side. The majority of this polygon intersects with the Paiute and Andrews Mountain Inventoried Roadless Areas. There are remnants of historic mining throughout the polygon, including mine prospects, mine tailings, mining road and mining adits There is a boundary fence along the south side of T. 12 S., R. 35 E., section 35 and mining relics east of Forest Service Road 12S103. Old mining shacks are found at the narrows (T. 10 S., R. 36 E., section 15). There are mining site and ruins west of Andrews Mountain. There are also mining ruins, adits and a dump in T. 10 S., R. 36 E., section 20. No mining infrastructure is being maintained. There are active grazing allotments in the polygon, with associated fences and other range improvements. There are fences along the existing wilderness boundary in T. 11 S., R. 36 E. and section 18. The area includes the former Saline Valley Road alignments along the northeast perimeter. There are no other known structures or dwellings. Very little cultural survey work has been done in the area, but there are 20 documented cultural resource sites including prehistoric sites with rock rings and artifact scatters and historic sites associated with historic mining in Mazourka Canyon. The polygon is mostly unsurveyed for invasive plant species. In the northeastern corner, there is some cheatgrass and Russian thistle, but they are not widespread. This area provides some habitat and connectivity for wildlife. Mostly intermittent stream channels and some springs are found. Riparian areas are mostly in good condition. Some salt cedar (non-native plant species) is present.

Opportunities for Solitude or Primitive and Unconfined Recreation

Topography includes the steep western escarpment of Inyo Mountains, with steep slopes, canyons, extremely rugged terrain and high elevation desert plateaus with steep to gentle slopes along the eastern side. There is some screening due to topography and vegetation. Screening is variable along the western escarpment due to topography, but there is little vegetation. There is some visibility of Highway 395. In the northeastern corner of the polygon there are views to

Death Valley National Park. The western boundary (along the escarpment) is approximately one mile from the Owens Valley (roads, transmission lines, livestock grazing) and 3 to 5 miles from Highway 395. The northern perimeter is bounded by the paved Eureka Valley Road and Saline Valley Road. The southeastern perimeter is bounded by Mazourka Canyon Road (county road), which accesses mining claims and the communication site on top of Mazourka Peak. There are numerous authorized roads and motorized trails within this polygon, including through the middle of the polygon. Off highway vehicle recreation, dispersed camping, mineral exploration and sightseeing are popular activities throughout this area, primarily during the spring and fall months. There is lower use in the summer due to heat. The opportunity for solitude or primitive and unconfined recreation is limited in some the road and motorized trail system areas. In most of the area, the potential for encounters with other visitors is low to medium. Marble Canyon is a scenic destination for day hikers. The pinyon-juniper woodlands and subalpine areas offer some primitive recreation opportunities like hiking, horseback riding and deer hunting (fall). Backpacking opportunities are limited to the few areas with surface water. There are also opportunities for wildlife observation, photography and enjoying nature. Winter snowpack sometimes allows cross-country skiing in higher elevations.

Other Features of Value

There are steep escarpments of the Inyo Mountains with complex geology. The Narrows of Marble Canyon is a unique geologic feature in the northeastern corner. The area includes vistas of the Sierra Nevada range, prehistoric cultural resource sites and remnants of historic mining. The area includes habitat for Townsend's big-eared bat, some in historic mining areas. There are many rare plants, including pinyon beardtongue, Inyo milkvetch, pinyon rockcress, Mojave fishhook, and cliffdweller (Forest Service sensitive species). The lowest elevation bristlecone pine forests occur here, in an ecological refugium that may be challenged as the climate continues to warm.

Manageability

This is a large polygon located between the forest boundary within one mile of the Owens Valley, and the Inyo Mountains Wilderness. There are numerous cherry stem roads and authorized motorized trails throughout the polygon, including a large cherry stem in the northeastern portion, dividing the polygon into two non-motorized areas. One of the non-motorized areas is partially bordered by the Inyo Mountains Wilderness, but most of the polygon is separated from the wilderness by roads or motorized trails. There are general tribal concerns regarding tribal access and use.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are opportunities for primitive and unconfined recreation. There are developments related to mining activity as well as range improvements. This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 32,500 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 26,000 acres. The opportunity for solitude is limited in the authorized motorized areas.

Polygon 1242 (North of Little Cowhorn Valley)

General Description

Polygon 1242 (North of Little Cowhorn Valley) consists of 2,678 acres with elevations ranging from 7,600 to 8,400 feet. It is contiguous with Piper Mountains Wilderness (Bureau of Land Management) and located west of the Piper Mountains Wilderness, north of Little Cowhorn Valley (Figure B-8, Inyo National Forest evaluation map F).

National Vegetation Classification System data shows 53 percent of the area of the polygon (1,410 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. An additional 1,100 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its total national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper and xeric shrublands and blackbrush. The combination of alkali flats and old growth pinyon-juniper is a unique feature of this area. Sagebrush converting to alkali flat in areas. The topography is flat and rolling hills. The area is not within any inventoried roadless areas. There has been some historic mining and timber harvest but for the most part, there has been very little impact from humans within this area. Human impact on plant communities is low to moderate. There are some invasive species present (some cheatgrass and Russian thistle). The area does provide some contiguous habitat and connectivity for wildlife. Most of the polygon is within a mapped wildfire restoration zone (60 percent) and a wildfire maintenance zone (40 percent).

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography is flat and rolling hills with some screening present from topography and trees. Potential for encountering other visitors is low. The eastern portion of the polygon follows the forest boundary with Bureau of Land Management, and is contiguous with Piper Mountain Wilderness (Bureau of Land Management). The polygon is surrounded by a road system to the north, west and south, and there is one road that cherry stems the northwest corner. The Eureka Valley Road is within a half mile of the southern boundary of the polygon. There are opportunities for primitive-type recreation activities such as cross-country hiking, general forest exploration and photography during the summer, and deer hunting in the fall.

Other Features of Value

There are many rare plants including Little Cut Leaf, Compact Fleabane, Inyo Milk Vetch, Pinyon Beardtongue, and Inyo onion. The combination of alkali flats and old growth pinyon-juniper is a unique feature of this area. Alkali flats were identified as an under-represented type in the R5 research natural area system during the plan revision assessment phase. The area has had very little survey for cultural resources; however, there are general tribal concerns regarding tribal access and use.

Manageability

The polygon is surrounded by a road system and would form a finger-shaped extension to the Piper Wilderness.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The combination of alkali flats and old growth pinyon-juniper is a unique feature of this area. Potential for encountering other visitors in this area is low. There are opportunities for solitude or primitive and unconfined recreation, including cross-country hiking, general forest exploration, photography and deer hunting. There are general tribal concerns regarding tribal access and use. There are road systems that surround the area, including one that cherry stems the northwest portion of the polygon. The Eureka Valley Road is approximately half mile from the southern boundary of the polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 1,400 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 1,100 acres.

Polygon 1246 (North of Eureka Valley Road)

General Description

The Polygon 1246 (North of Eureka Valley Road) consists of 43,231 acres with elevations ranging from 5,000 to 8,600 feet. A very small portion along the southeast corner is contiguous with the Piper Mountains Wilderness (Bureau of Land Management. It is a large polygon located between Eureka Valley Road on the south and Highway 168 to the north, between the White Mountains and Inyo Mountains (Figure B-8, Inyo National Forest evaluation map F).

National Vegetation Classification System data indicates 48 percent of the area of the polygon (20,900 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are Inter-Mountain big sagebrush shrubland, inter-mountain basins montane sagebrush steppe, inter-mountain basins mixed salt desert scrub and Great Basin xeric mixed sagebrush shrubland. An additional 20,600 acres are comprised of Great Basin pinyon-juniper woodland, which has less than 15 percent of its total national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands and blackbrush. The topography includes steep to gentle slopes. It intersects with the Soldier Canyon Inventoried Roadless Area. Some historic clearing/harvesting for mining is evident. CARMA (Combined Array for Research in Millimeter-Wave Astronomy, a special use authorization) has developments that are substantially noticeable in the northern portion of the polygon. There are large numbers of prehistoric sites. There is some cheatgrass that is moderately widespread in portions of the polygon. The area provides some contiguous habitat connectivity for wildlife. There is limited water. Intermittent streams include Deadman Canyon, Crooked Road Canyon and Soldier Canyon. There are no mapped meadows. Soils are at desired condition. Air quality is excellent. Ancient bristlecone pines are reported on some north-facing slopes of the Inyo Mountains.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography is steep to gentle slopes and there is some screening in the area from vegetation and canyons. There is very little visibility of developments. The northern boundary is Highway 168 and the southern boundary is Eureka Valley Road, a paved road and less traveled route to Death Valley National Park. There are numerous roads and motorized trails within this polygon,

located along the edge and through the polygon. The opportunity for solitude or primitive and unconfined recreation in these motorized use areas is very limited. Off highway vehicle recreation, dispersed camping, mineral exploration and sightseeing are popular activities throughout this area, primarily during the spring and fall months. There is lower use in the summer due to heat.

There are opportunities for solitude and primitive and unconfined recreation. Travel in the lower elevation desert environment is challenging due to the lack of surface water and steep topography. The pinyon-juniper woodlands and subalpine areas offer primitive recreation opportunities typical of the Great Basin: hiking, horseback riding and deer hunting in the fall. Backpacking is generally confined to the few areas with surface water. The degree of challenge is accentuated by the scarcity of surface water and lack of trails. There are also opportunities for wildlife observation, photography and enjoying nature. Winter snowpack sometimes allows cross-country skiing in higher elevations. Along the western escarpment of mountains, there are some opportunities for primitive recreation such as canyoneering, wildlife observation, spring wildflower observation, photography and exploring old mine sites. Several of the canyons along the western escarpment of the mountains are scenic destinations for day hikers, though some also have motorized trails and off highway vehicle recreationists. While opportunities for primitive recreation do exist,

Other Features of Value

The area includes rare plants including Mojave fishhook cactus and little cutleaf. There are large numbers of prehistoric sites including prehistoric encampments, rock rings and lithic scatters. There are general tribal concerns regarding tribal access and use. The polygon includes outstanding views of Mt. Palisade glacier area and the Sierra Nevada. There is some limestone geology and also unique sedimentary and metamorphic geology.

Manageability

This is a large polygon located between the straight-line forest boundary along the western and eastern edge. There are numerous cherry stem roads and motorized trails throughout the polygon, along the edge and routed through the polygon. There is illegal off highway vehicle use occurring that is widespread along the western and southern portion of the polygon. The area includes one water right.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are opportunities for solitude or primitive and unconfined recreation in areas away from roads and motorized trails. The potential for encounters is very low to medium. Most recreation use is around roads and motorized trails where the opportunity for solitude or primitive and unconfined recreation is very limited. This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 20,900 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 20,600 acres. The opportunity for solitude is degraded due to the proximity to motorized recreation (roads and motorized trails). There are general tribal concerns regarding tribal access and use.

Polygon 1248 (Redding Canyon, Black Canyon)

General Description

Polygon 1248 (Redding Canyon, Black Canyon) consists of 38,756 acres with elevations ranging from 5,000 to 10,400 feet. It is located west of White Mountain Road and the Ancient Bristlecone Pine Forest, south of Silver Canyon, and north of Highway 168, and includes Redding Canyon, Black Canyon, Marble Canyon and Black Mountain at 9,083 feet in elevation. The polygon follows the straight-line forest boundary along the western perimeter, Highway 168 along the southern perimeter, White Mountain Road along the eastern perimeter and Silver Canyon along the northern boundary (Figure B-8, Inyo National Forest evaluation map F).

National Vegetation Classification System data indicates 41 percent of the area of the polygon (15,818 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are Inter-Mountain big sagebrush shrubland, inter-mountain basins montane sagebrush steppe, inter-mountain basins mixed salt desert scrub and Great Basin xeric mixed sagebrush shrubland. An additional 20,000 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its total national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper, sagebrush, subalpine forest and xeric shrublands and blackbrush. Public comments indicate an ancient bristlecone pine population is on the north slopes of Black Mountain. The area is a sage grouse priority habitat. The terrain is extremely steep and rugged. Authorized motorized trails are dispersed throughout the polygon; however, much of the polygon intersects with the Black Canyon Inventoried Roadless Area. There is some historic and modern firewood harvest in the area from Westgard Pass Road. This area includes the Historic Poleta Mining Complex. There are also prehistoric encampments (rock rings), lithic scatters, and several historic rock structures and associated refuse. Public comments indicate there are single track trails used by mountain bikers and motorcycle riders in the area. There is some cheatgrass but it is not widespread. The area provides contiguous habitat and connectivity for wildlife. Water is limited in the area. Perennial stream channels include Redding and Poleta canyons. Marble Canyon is a major intermittent stream. Some riparian vegetation is present in canyons. There are no mapped meadows. Soils are mostly at desired conditions, with some localized mining and grazing impacts, but good overall. The air quality is excellent.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography is extremely steep and rugged. There is good screening from canyons and pinyon pine trees. The western boundary is generally within two miles of the Owens Valley, the southern boundary is Highway 168, the eastern boundary is White Mountain Road (a National Forest Scenic Byway) and the northern boundary is Silver Canyon (road and transmission lines). There are numerous roads and motorized trails within this polygon, including some that run through the polygon. Off highway vehicle recreation, mineral exploration and sightseeing are popular activities throughout this area. The opportunity for solitude is very limited in the areas in proximity to the forest system roads and extensive motorized trail system. There are some quiet places free from motorized noise within the polygon, away from roads and motorized trails, especially in the canyons. The potential for encounters is very low to medium. Most of the use is around roads and motorized trails.

The pinyon-juniper woodlands and subalpine areas offer primitive recreation opportunities typical of the Great Basin: hiking, horseback riding and deer hunting in the fall. Backpacking opportunities are limited to the few areas with surface water. The degree of challenge is accentuated by the steep terrain along the western escarpment of the White Mountains and lack of trails. There are also opportunities for wildlife observation, photography and enjoying nature, particularly in the subalpine areas off of White Mountain Road. Winter snowpack allows cross-country skiing in higher elevations, but gaining access requires more than a 10-mile hike into the area. Along the western escarpment of mountains, there are some opportunities for primitive recreation such as canyoneering, wildlife observation, spring wildflower observation, photography and exploring old mine sites. Several of the canyons along the western escarpment of the mountains including Redding Canyon and Black Canyon, are scenic destinations for day hikers, though some also have motorized trails and off highway vehicle recreationists. While opportunities for primitive recreation do exist, travel in the lower elevation desert environment is challenging due to the lack of surface water and steep topography.

Other Features of Value

The area includes a sage grouse priority habitat, Townsend's big eared bat populations, and the Panamint alligator lizard. The rare Shockley's milkvetch plant occurs here. There are outstanding views of Volcanic Crater Mountain, Palisade glacier area and the Sierra Nevada.

Manageability

This polygon is located between the straight-line forest boundary along the western edge and the White Mountain Road on the east. There are some cherry stem roads along the edge and motorized trails that run along the edge and through the polygon, including the trails in Black Canyon. It was noted that there is illegal motorcycle use in the northern portion of the polygon. The area contains priority habitat for sage grouse.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are opportunities for solitude or primitive and unconfined recreation in areas away from roads and motorized trails, especially in the canyons. The potential for encounters is very low to medium. Most recreation use is around roads and motorized trails where the opportunity for solitude or primitive and unconfined recreation is very limited. This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 15,818 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 20,000 acres.

Polygon 1258
(Ancient Bristlecone Pine Forest and Wyman Canyon South)

General Description

Polygon 1258 (Ancient Bristlecone Pine Forest and Wyman Canyon South) consists of 35,248 acres with elevations ranging from 6,000 to 8,800 feet. It is located east of White Mountain Road and partially within the Ancient Bristlecone Pine Forest (including Schulman Grove), south of Wyman Canyon Road and north of Highway 168 (Figure B-8, Inyo National Forest evaluation map F). It is shaped by cherry stem roads that form a polygon with sections. The western boundary runs along White Mountain Road.

National Vegetation Classification System data indicates 35 percent of the area of the polygon (12,458 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are Inter-Mountain big sagebrush shrubland, inter-mountain basins montane sagebrush steppe, and Great Basin xeric mixed sagebrush shrubland. An additional 17,200 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its total national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include mountain mahogany, pinyon-juniper, sagebrush and subalpine forest. The northwest portion of the polygon is within the Ancient Bristlecone Pine Forest, and includes the Discovery Trail (National Recreation Trail). The topography is steep with rugged slopes. The majority of the polygon intersects with the Birch Creek Inventoried Roadless Area. The southwest corner of the polygon has motorized trails. Historic mining and grazing has occurred in the area. Developments include Wilkerson Mining Complex, the Mexican Mine (cabins, adits, and tailings), a stone cabin, hunting blind and rock structure, as well as numerous prehistoric rock ring and artifact scatters. The area contains the Schulman Grove Visitor Center. There are numerous springs and perennial channels including Birch Creek. There are many intermittent channels. The air quality is excellent. Some cheatgrass and salt cedar is present, but is not widespread. The area provides some contiguous habitat and connectivity for wildlife. The species composition is natural. The legacy grazing and mining impacts are highly localized and the rest of the area is likely at desired condition for soil conditions.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography is steep with rugged slopes. There is abundant screening and very little visibility to developments or roads. The western half of the polygon is in proximity to paved forest highway (White Mountain Road, which is a National Forest Scenic Byway), Highway 168, and roads and motorized trails, which limit the opportunity for solitude in these areas. The northern boundary follows Wyman Canyon Road, which is a lightly traveled system road, but is a main route that connects to Silver Canyon Road on the west side of the White Mountains, and traverses to the east side of the White Mountains to Deep Springs Valley.

Although there are some roads that cherry stem the eastern half of the polygon, these are more lightly traveled roads providing opportunity for solitude or primitive and unconfined recreation in this eastern section. The area receives low amount of recreation use, except near Schulman Grove and along the White Mountain Road on the western boundary of the polygon. Notable opportunities for solitude or primitive and unconfined recreation exist in the western half of the polygon, in the Ancient Bristlecone Pine Forest, where there are several trails including the Discovery Trail (National Recreation Trail) and Methuselah Trail. The western half of the polygon is a popular area for hiking, wildlife observation, dark skies observation, photography, exploring old mine sites and enjoying nature. Overnight camping is not allowed in the Ancient Bristlecone Pine Forest, so there are no opportunities for backpacking in this portion of the polygon. Opportunities for primitive recreation in the eastern portion of the polygon focus on hiking and hunting in the Birch Creek drainage, which has an unmaintained trail in the drainage. Most of the rest of the polygon is steep terrain and there are no trails, so there are opportunities for challenging cross-country trips. Winter snowpack allows cross-country skiing in higher elevations, but gaining access requires more than 10 miles ski into the area.

Other Features of Value

The area includes the Ancient Bristlecone Pine Forest. It is a sage grouse priority habitat and also a habitat for Townsend's big-eared bat, a proposed species of conservation concern and Forest Service sensitive species, which is associated with the mine adits. Many rare plants are known here, including spiny-leaved milk vetch, little cutleaf, Nevada ninebark, Bristlecone pines, compact fleabane, and sensitive Dedecker's clover. There are outstanding sedimentary and metamorphic geology and colorful rock features. Approximately 20 percent of the area has been surveyed for cultural resources. The roughly 25 documented cultural properties include remains of the Wilkerson Mining Complex, the Mexican Mine (cabins, adits, tailings), a stone cabin, hunting blind and rock structure, as well as numerous prehistoric rock ring and artifact scatters.

Manageability

The polygon is irregularly shaped, with cherry stemmed roads that protrude into the middle of the polygon. The polygon is bounded by a National Forest Scenic Byway on the west, a native surface system road on the north which is a main route that traverses to the east side of the White Mountains to Deep Springs Valley, forest boundary on the east and Highway 168 to the south. Wyman Canyon Road along the northern perimeter frequently needs maintenance due to wash outs. The area contains priority habitat for sage grouse. There are general tribal concerns regarding tribal access and use. There is one water right. The area contains the Schulman Grove Visitor Center.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation exist in the eastern and western half of the polygon, in the Ancient Bristlecone Pine Forest, where there are several trails including the Discovery Trail (National Recreation Trail) and Methuselah Trail. There are developments in the area, including Schulman Grove Visitor Center, and remnant historic mining features, primarily in the western half of the polygon. This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 12,458 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 17,200 acres.

Polygon 1275 (North of Silver Canyon)

General Description

Polygon 1275 (North of Silver Canyon consists of 10,435 acres with elevations ranging from 4,800 to 9,600 feet. It is contiguous with the White Mountains Wilderness and is located west of White Mountain Road, north of Silver Canyon, within the White Mountains. It is a rectangular-shaped polygon, which follows the straight line boundary of the White Mountains Wilderness on the north and a power line corridor to the south (Figure B-8, Inyo National Forest evaluation map F). The area is bounded by roads along the western perimeter with a prominent cherry stem road and follows the White Mountain Road in the northeastern corner.

National Vegetation Classification System data indicates 59 percent of the area of the polygon (6,168 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are Inter-Mountain big sagebrush shrubland, inter-mountain basins montane sagebrush steppe and inter-mountain

basins mixed salt desert scrub. An additional 3,200 acres are comprised of Great Basin pinyon-juniper woodland, which has less than 15 percent of its total national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include mountain mahogany, pinyon-juniper, sagebrush and subalpine forest. The northeast corner of the polygon is within the Ancient Bristlecone Pine Forest. There are steep canyons along the western escarpment of the White Mountains. Although the majority of polygon intersects with Boundary Peak Inventoried Roadless Area there is an extensive network of cherry stem forest system roads that form a cookie cut out in the western portion of the polygon, and is adjacent to a network of authorized motorized trails that occur within the polygon. From the ridge tops, Bishop and the Owens Valley are visible. The area has limited water; Silver Canyon and potentially Gunter Creek are perennial channels. There are no mapped meadows. There is riparian vegetation within canyon areas. The air quality is excellent. This area does provide some contiguous habitat and connectivity for wildlife. There are some localized impacts to soils (off highway vehicle incursions); however, the majority of the area is at desired condition for soils. There is historic mining on the western side of the polygon, including Gunter Creek Mining Site. The Gunter Creek Mine area contains several structures, including roads, trash, pipe, lumber, adits, shafts and platforms. Cheatgrass is the only notable invasive species. Public comments indicate there are single track trails used by mountain bikers and motorcycle riders in the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography has steep slopes and canyons along the western escarpment of the White Mountains making it difficult to access. There are opportunities for solitude or primitive and unconfined recreation in in steep canyons and other interior portions of the polygon where the potential for encounters with other users is low. The pinyon-juniper woodlands and subalpine zone along the eastern side of the polygon offer primitive recreation opportunities typical of the Great Basin: hiking, horseback riding and deer hunting in the fall. There are also opportunities for photography and enjoying nature, particularly in the areas off of White Mountain Road. Winter snowpack allows cross-country skiing in higher elevations, but gaining access requires more than a 10 mile ski into the area.

Opportunities for solitude or primitive and unconfined recreation are limited within the western portion of the polygon due to an extensive network of roads and motorized trails both within the polygon and along the border. The White Mountain Road, a National Forest Scenic Byway runs along the perimeter in the northeast corner. Along the western escarpment of mountains, there are some opportunities for primitive recreation such as canyoneering, wildlife observation, spring wildflower observation, photography and exploring old mine sites.

Other Features of Value

There is outstanding geology and views to the Volcanic Tablelands and the Sierra Nevada. Although very little of the area is surveyed for cultural sites, three documented properties include an historic can dump area, a prehistoric lithic scatter and the Gunter Creek Mining Site.

Manageability

The boundary on the west side of the polygon is in proximity to roads and motorized trails, however, due to steep terrain there is little chance of vehicle incursion. There are general tribal

concerns about access and use. Off highway vehicle recreation is a popular activity in the western portion of the polygon associated with the historic mining sites.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited in the western portion of this polygon due to an extensive network of authorized motorized trails and roads within the polygon or forming a cookie cut border. Opportunities for solitude or primitive and unconfined recreation in the eastern corner is limited by White Mountain Road. There are opportunities for solitude or primitive and unconfined recreation in steep canyons. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 6,168 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 3,200 acres. There may be an opportunity to reshape the polygon to exclude the motorized trails, as well as tie the boundary to a natural feature, adding a projected extension to the White Mountain Wilderness.

Polygon 1276 (Gunter Canyon)

General Description

Polygon 1276 (Gunter Canyon) contains 1,048 acres with elevations ranging from 4,800 to 9,600 feet. It is contiguous with White Mountains Wilderness and is located northwest of Gunter Canyon, within the White Mountains. It is a small polygon between Gunter Canyon Road and the White Mountains Wilderness, with the forest boundary on the west (with Bureau of Land Management) (Figure B-8, Inyo National Forest evaluation map F).

National Vegetation Classification System data indicates 73 percent of the polygon (764 acres) consists of ecological groups that have has less than 10 percent of their national extent protected in the National Wilderness Preservation System. None of the groups are prevalent in the polygon.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper and xeric shrublands and blackbrush. A small portion of the polygon (buffer between the road and White Mountain Wilderness) intersects with Boundary Peak Inventoried Roadless Area. The polygon includes an area that parallels a system road that was excluded during the designation of the White Mountains Wilderness. There are a few intermittent stream channels and no perennial stream channels. Historic mining occurred in the area. There are no known developments, although according to the United States Geological Survey quad there is one open pit mine in the area, and shafts along the western boundary. There are a few invasive plant species (possibly cheatgrass).

Opportunities for Solitude or Primitive and Unconfined Recreation

The polygon is a small polygon that is surrounded by road systems and historic mining activity. Part of the polygon encompasses the small buffer between an existing road system and White Mountains Wilderness. It is a popular paragliding location.

Other Features of Value

No other features of value were noted.

Manageability

The polygon is small in size and surrounded by a road system.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads that cherry stem the boundary of this small polygon; sight and sounds would likely penetrate much of the polygon. There is an open pit mine and shafts in the area. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 764 acres. There may be an opportunity to reshape the polygon, although it would add a very small area that is isolated by the road system to the White Mountains Wilderness.

Polygon 1281 (Ancient Bristlecone Pine Forest and Dead Horse Meadow)

General Description

Polygon 1281 (Ancient Bristlecone Pine Forest and Dead Horse Meadow) consists of 11,210 acres with elevations ranging from 7,200 to 9,600 feet. It is contiguous with the White Mountains Wilderness and located east of White Mountain Road, northeast of Schulman Grove. It parallels the existing wilderness boundary to the forest boundary on the east. It is an elongated, rectangular shaped polygon that runs west to east, east of White Mountain Road to the forest boundary, following the existing straight line wilderness boundary (Figure B-8, Inyo National Forest evaluation map F). The southern straight line boundary is the power line corridor.

National Vegetation Classification System data indicates 31 percent of the area of the polygon (3,419 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is inter-mountain basins montane sagebrush steppe. An additional 6,300 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its total national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include mountain mahogany, pinyon-juniper, sagebrush and subalpine forest. The western portion of the polygon is within the Ancient Bristlecone Pine Forest. The topography features the plateau area of the White Mountains with steep to gentle slopes. The majority of polygon intersects with Boundary Peak and Blanco Mountain Inventoried Roadless Areas. The area provides some contiguous habitat and connectivity for wildlife. Perennial channels include Crooked Creek, Mill Canyon and Water Canyon. There are numerous springs present. There are no mapped meadows, but riparian vegetation is associated with perennial channels and springs. These are in unknown condition. There are highly localized legacy grazing and mining impacts. The area is at desired condition for soils and the air quality is excellent. There are authorized motorized trails within the polygon; a motorized trail in the vicinity of Dead Horse Meadow runs north to south and bisects the polygon. A utility right of way and Wyman Canyon Road exist along the southern perimeter.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area has steep to gentle slopes with some screening present due to topography, especially from vegetation and canyons. Wyman Road is approximately one quarter mile from the southern boundary. The western boundary is White Mountain Road. There is a motorized trail in the vicinity of Dead Horse Meadow that runs north to south and bisects the polygon. This motorized trail cherry stems the White Mountain Wilderness. The canyon areas are free from motorized sounds. Sight and sounds of use on motorized trails and high speed road would likely penetrate much of the 300 acre finger of the polygon that is adjacent to White Mountain Road (paved forest road that is a National Forest Scenic Byway). The motorized trail in the vicinity of Dead Horse Meadow is currently heavily damaged by rains and motorized travel is difficult. There may be some impacts to solitude in area adjacent to the route. Visitor use in the area is low with most of the use occurring during the summer and fall months.

Notable opportunities for primitive recreation exist in the western half of the polygon, in the Ancient Bristlecone Pine Forest: hiking on three unmaintained forest system trails, wildlife observation, dark skies observation, photography and enjoying nature. The high elevation and lack of maintained trails adds challenge to the visitor experience. Overnight camping is not allowed in the Ancient Bristlecone Pine Forest, so there are no opportunities for backpacking in this portion of the polygon. Opportunities for primitive recreation in the eastern portion of the polygon focus on hiking, horseback riding and hunting in the Crooked Creek drainage. Most of the rest of the polygon is steep terrain without trails, so there are opportunities for adventurous cross-country trips. Winter snowpack allows cross-country skiing in higher elevations, but gaining access requires more than 10 miles ski in to the area.

Other Features of Value

The area features outstanding metamorphic and sedimentary geology. It includes sage grouse habitat, the rare Booth's evening primrose, and Ancient Bristlecone Pine Forest. Only about 20 percent of the area has been surveyed for cultural resources. The six documented sites include prehistoric encampments (rock rings and artifact scatters) and one potential historic structure or ruins.

Manageability

The east-west boundary on the southern side of the polygon is not based on easily identified natural or man-made features. Utility right of way and Wyman Canyon Road exist along the southern perimeter. Wyman Road is approximately a quarter mile from southern boundary. The western boundary is White Mountain Road. There is a motorized trail in the vicinity of Dead Horse Meadow that runs north to south and bisects the polygon. This motorized trail is cherry stemmed where it enters the White Mountain Wilderness. The area contains sage grouse habitat, which may require management activities inconsistent with wilderness. There are general tribal concerns regarding tribal access and use. There is one private land inholding, access is unknown.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are opportunities for solitude or primitive and unconfined recreation in much of the area that is free from motorized noise, especially in the canyons. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 3,419 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System

comprises an additional 6,300 acres. Within the motorized trail areas, there are limited opportunities for solitude or primitive and unconfined recreation. One of the motorized trail areas is adjacent to White Mt road (FR 4S01), a high use and speed road.

Polygon 1295 (White Mountain Road, Barcroft Research Station)

General Description

Polygon 1295 (White Mountain Road, Barcroft Research Station) consists of 2,265 acres ranging in elevation from 10,500 to 12,500 feet. It is contiguous with the White Mountains Wilderness and located along the White Mountain Road, between Patriarch Grove and White Mountain Research Station (Barcroft), near White Mountain Peak (Figure B-5, Inyo National Forest evaluation map C).

National Vegetation Classification System data indicates 16 percent of the area of the polygon (657 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. Each of these ecological groups, however, comprises less than 1,000 acres in this polygon.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The ecosystem type is sagebrush. The south corner of the polygon is within the Ancient Bristlecone Pine Forest. The entire polygon is within a mapped wildfire restoration zone. The polygon encompasses an area that was excluded (cherry stemmed) during the 2009 legislation due to power lines, White Mountain Road, and the White Mountain Research Station facilities. A small portion (north half) of the polygon intersects with the Boundary Peak Inventoried Roadless Area. There is limited water and no perennial streams. There are possibly some intermittent channels.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is immediately adjacent to White Mountain Road (National Forest Scenic Byway) and Barcroft Research Station, which limits the opportunity for solitude or primitive and unconfined recreation.

Other Features of Value

No other features of value were noted.

Manageability

This polygon is the area that was cherry stemmed during the 2009 legislation which designated the White Mountains Wilderness, due to the power line corridor and White Mountain Road.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to proximity to White Mountain Rd; sight and sounds would likely penetrate much of the polygon. The boundaries drawn for the White Mountains Wilderness as part of the 2009 legislation excluded this area from wilderness designation due to existing uses and developments. There is likely a need for motorized access to maintain a powerline that runs through middle of this polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10

percent of their national extent in the National Wilderness Preservation System comprise 657 acres.

Polygon 1297 (North of Jeffrey Mine)

General Description

Polygon 1297 (North of Jeffrey Mine) consists of 1,092 acres with elevations ranging from 5,500 to 6,500 feet. It is contiguous with the White Mountains Wilderness and located west of White Mountain Road, north of Silver Canyon, within the White Mountains. It is a small polygon on the west side of the White Mountains, east of Hammil Valley and north of Jeffrey Mine (Figure B-5, Inyo National Forest evaluation map C).

National Vegetation Classification System data indicates 83 percent of the area of the polygon (903 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. Each of these ecological groups, however, comprises less than 1,000 acres in this polygon.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper and xeric shrublands and blackbrush. The majority of the polygon intersects with Boundary Peak Inventoried Roadless Area. The polygon encompasses an area that was excluded (cherry stemmed) during the 2009 wilderness designation legislation due to roads, mining, and water system access. There is an historic open pit mine. There is an aqueduct and ditches. Perennial streams include Willow Creek, Cottonwood Creek and Lone Tree Creek.

Opportunities for Solitude or Primitive and Unconfined Recreation

Opportunities for solitude or primitive and unconfined recreation are limited due to the extensive network of authorized forest system roads along the perimeter, several cherry stem to form the boundary of this polygon and nearly splitting it into thirds. The sight and sounds would likely penetrate much of this small polygon.

Other Features of Value

No other features of value were noted.

Manageability

This polygon is the area that was cherry stemmed, due to roads, mining and water system access, during the 2009 legislation that designated the White Mountains Wilderness. Motorized access may be needed to maintain an existing water system that carries irrigation water to Chalfant Valley.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The boundaries drawn for the White Mountains Wilderness as part of the 2009 legislation excluded this area from wilderness designation due to roads and existing uses. Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads along the perimeter, several cherry stem to form the boundary of this polygon. The sight and sounds would likely penetrate much of this small polygon. Motorized access may be needed to maintain an existing water system that carries irrigation water to

Chalfant Valley. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 903 acres.

Polygon 1301 (Leidy Creek South)

General Description

Polygon 1301 (Leidy Creek South) consists of 3,010 acres with elevations ranging from 5,500 to 7,600 feet. It is contiguous with the White Mountains Wilderness and recommended wilderness and located on the east side of the White Mountains, west of Fish Lake Valley, south of Leidy Creek (Figure B-5, Inyo National Forest evaluation map C). It is shaped along the Von Schmidt Line (state line) with the boundary with recommended wilderness. It follows the forest boundary on the east side of the polygon.

National Vegetation Classification System data indicates 74 percent of the area of the polygon (2,224 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. Each of these ecological groups, however, comprises less than 1,000 acres in this polygon.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper, sagebrush, xeric shrublands and blackbrush. A small portion of the polygon intersects with the Boundary Peak Inventoried Roadless Area. The connectivity between pinyon-juniper habitats and shrublands remains intact. Brook and rainbow trout were introduced into previously fishless waters, and are self-sustaining populations that have displaced endemic species. There is departure from natural conditions in spring channels due to fish introductions. There is some alteration from invasive plant species, mining and wild horses. Cheatgrass and halogeton are increasing. Pinyon pine has expanded due to fire suppression. There are no mapped meadows. Soils are likely at the desired condition. The air quality is excellent. The area is mostly open with little screening, except in the canyons on the west side. From the eastern portion of the polygon, private land development (Fish Lake Valley), power lines and Highway 264 are visible.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography is steep on the western edge leading to the White Mountains Wilderness. Low angle open alluvial fans are found on the lower slopes on the east side. The area is quiet and free from motorized sound, especially on the western side of the polygon, which adjoins the White Mountains Wilderness. There is a lightly used road along the northern boundary. The potential for encounters is low. The area is largely undeveloped with opportunity for primitive-type recreation activities such as cross-country hiking, hunting and general forest exploration with some degree of challenge due to the terrain.

Other Features of Value

No other features of value are noted.

Manageability

Management of the Paiute cutthroat trout population, which is federally listed as threatened, requires road and equipment access. The population is within White Mountains Wilderness, and

the road access is along Leidy Creek, along the north perimeter of the polygon. There are two water rights.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited along an authorized forest system road in the northern portion and Highway 264 to the east. Sight and sounds would likely penetrate much of this small polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 2,224 acres. There may be opportunity for primitive and unconfined recreation. The polygon is currently oddly shaped due to the Von Schmidt line and it adjoins recommended wilderness. The polygon has the potential to be reshaped.

Polygon 1308 (Indian Creek to Leidy Creek)

General Description

Polygon 1308 (Indian Creek to Leidy Creek) consists of 13,886 acres, ranging in elevation from 5,200 to 9,000 feet. It is contiguous with the White Mountains Wilderness and located on the east side of the White Mountains between Indian Creek on the north and Leidy Creek to the south (Figure B-5, Inyo National Forest evaluation map C).

National Vegetation Classification System data indicates 76 percent of the area of the polygon (10,534 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are Inter-Mountain big sagebrush shrubland and inter-mountain basins mixed salt desert scrub. An additional 3,100 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its total national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper and xeric shrublands and blackbrush. There is steep terrain in the western portion of the polygon, but in the eastern portion it is relatively flat and open (down on alluvial fans). The western portion of polygon intersects with Boundary Peak Inventoried Roadless Area. This area has limited habitat fragmentation and the connectivity between pinyon-juniper habitats and shrublands remains intact. Leidy Creek and Indian Creek are perennial streams located along the perimeter of the polygon. Marble Creek, within the polygon, is an intermittent stream that flows into the summer. Grazing occurs in the area. Soil impacts due to legacy grazing and mining are highly localized. Soils are likely at desired condition. The air quality is excellent. Stable invasive plant species include cheat grass, halogeton, Russian thistle and sweet clover. Brook and rainbow trout were introduced into previously fishless waters and these self-sustaining populations have displaced endemic species. The eastern boundary is Bureau of Land Management land. Green Monster Mine is located on private land in the western portion of the polygon, and was excluded from the White Mountain Wilderness. Other visible development includes private land development along Indian Creek on the northern boundary, and power lines, Highway 264 and developments in Fish Lake Valley.

Opportunities for Solitude or Primitive and Unconfined Recreation

There is steep terrain in the western portion of the polygon; the eastern portion is relatively flat and with open alluvial fans. The southwestern side of the polygon has steep terrain and opportunities for solitude or primitive and unconfined recreation. There are lightly used roads along Indian Creek and Leidy Creek to the north. There is low to moderate potential for encounter with other visitors. Most of the area is largely undeveloped and there are likely opportunities for solitude or primitive and unconfined recreation, such as cross-country hiking, hunting and general forest exploration with some degree of challenge due to the remoteness and terrain. However, in the lower open eastern portion of the polygon, there is limited opportunity for solitude or primitive and unconfined recreation due Highway 264.

Other Features of Value

Paiute cutthroat trout populations occur in the adjacent wilderness area.

Manageability

There is private land development along Indian Creek on the northern boundary. The eastern boundary is Bureau of Land Management land. Green Monster Mine is located on private land in the western portion of the polygon, and was excluded from the White Mountain Wilderness. Management of Paiute cutthroat trout population, which is federally listed as threatened, requires road and equipment access to the border of the White Mountains Wilderness, and the road access is along Leidy Creek, along the north perimeter of the polygon. Current uses in the area include grazing and guided hunting. There is one water right.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are opportunities for solitude or primitive and unconfined recreation throughout most of the area since it is free from sight and sounds of motorized use, especially along the western perimeter of the polygon. The northern and southern perimeters are bounded by lightly used roads. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 10,534 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 3,100 acres. The appearance of naturalness is affected in some areas by private land development, power lines, and Highway 264. The polygon has the potential to be reshaped to include the western perimeter that is adjacent to the White Mountains Wilderness, and would include cherry stem roads.

Polygon 1311 (Chiatovich Creek)

General Description

Polygon 1311 (Chiatovich Creek) consists of 11,214 acres ranging in elevation from 5,200 to 9,700 feet. It is contiguous with the White Mountains Wilderness and is located on the east side of the White Mountains, between Middle Creek on the north and Indian Creek to the south (Figure B-5, Inyo National Forest evaluation map C). It includes Chiatovich Creek and Black Mountain (9,704 feet).

National Vegetation Classification System data indicates 37 percent of the area of the polygon (4,130 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is inter-mountain basins montane sagebrush steppe. An additional 4,300 acres consists of Great Basin pinyon-

juniper woodland, which has less than 15 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include mountain mahogany, pinyon-juniper, subalpine forest and xeric shrublands and blackbrush. The entire polygon is within a mapped wildfire restoration zone. It is a sage grouse priority habitat. The topography includes steep terrain in the western portion of the polygon, but in the eastern portion it is relatively flat and open (down on alluvial fans). The polygon intersects with the Boundary Peak Inventoried Roadless Area. Chiatovich and Davis Creeks are perennial streams located within the polygon; Middle Creek and Indian Creek are perennial streams located along the perimeter. Riparian vegetation associated with the perennial streams is in unknown condition. Condition of meadows is unknown. Soils are likely at desired condition; soil impacts due to legacy grazing and mining are highly localized. The air quality is excellent. Invasive plant species are present, including cheat grass, which is likely increasing. Brook and rainbow trout were introduced into previously fishless waters; they are self-sustaining populations and have displaced endemic species. This area has limited habitat fragmentation and the connectivity between pinyon-juniper habitats and shrublands remains intact; it has a mostly natural fire regime. Public comments indicate range improvements (fences) may extend into the polygon.

Opportunities for Solitude or Primitive and Unconfined Recreation

There is steep terrain in the western portion of the polygon, but the eastern portion is relatively flat and open from alluvial fans. The polygon is shaped by roads and private land, including a cherry stem road and private land parcels that nearly dissect it in half, and include an area of authorized motorized trails within the polygon.

In the lower eastern portion, opportunities for solitude or primitive and unconfined recreation are limited due to exposure in the alluvial fan areas. Fish Lake Valley, power lines and Highway 264 are visible and motorized use heard. The western side of the polygon has steep terrain and opportunities for solitude or primitive and unconfined recreation. There are areas free from motorized sounds where not adjacent to roads and motorized trails in Middle, Chiatovich, Davis and Indian Creeks. The potential for encounters is low in winter months. There are likely opportunities for primitive-type recreation activities, including cross-country hiking, hunting and general forest exploration with some degree of challenge due to the remoteness and steep terrain, particularly along the western portion of the polygon.

Other Features of Value

The polygon is a sage grouse priority habitat and includes bristlecone pines. There are steep, scenic mountains in this area. There are several documented cultural resources sites; ruins are associated with both prehistoric settlement (rock rings and artifact scatters) and historic settlement (rock walls, depressions, trails, and structural remains).

Manageability

White Mountain Estates and associated infrastructure is located along Middle Creek and Chiatovich Creek, adjacent to the forest boundary; there is one private land parcel along Indian Creek (inholding within the forest boundary). There are regularly used roads and motorized trails, as well as the private land parcels that protrude into the area, nearly bisecting the polygon. The

area contains priority habitat for sage grouse, which may require management activities. Existing uses include grazing and guided hunting. There are three water rights.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads around the perimeter of the polygon. There is a portion of authorized motorized trails in the polygon. Private land developments, authorized forest system roads and motorized trails in the eastern portion nearly bisect the polygon. Sight and sounds would likely penetrate these portions of the polygon. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 4,130 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 4,300 acres. The polygon has the potential to be reshaped, adjacent to the White Mountains Wilderness, to exclude the areas near the private land development, although sight and sounds associated with motorized use in cherry stem roads and motorized trails would still be present.

Polygon 1312 (Boundary Peak)

General Description

Polygon 1312 (Boundary Peak) consists of 8,133 acres with elevations ranging from 6,800 to 9,600 feet. It is contiguous with the Boundary Peak Wilderness and a small portion of the White Mountains Wilderness on the northwest corner. It is located on the east side of the White Mountains, east of the Boundary Peak Wilderness between Queen Valley on the north and Middle Creek to the south (Figure B-5, Inyo National Forest evaluation map C). The polygon is elongated horizontally, following the boundary with the Boundary Peak Wilderness. It is narrow in some places due to the road system, and roads cherry stem to form the polygon.

National Vegetation Classification System data indicates 29 percent of the area of the polygon (2,388 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is inter-mountain basins montane sagebrush steppe. An additional 3,500 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include mountain mahogany, pinyon-juniper and subalpine forest. The entire polygon is within a mapped wildfire restoration zone. The topography includes steep canyons along the northern and eastern sides of the White Mountains. There is steep terrain, especially south of Trail Canyon. The majority of the polygon intersects with the Boundary Peak Inventoried Roadless Area. This area has limited habitat fragmentation and the connectivity between pinyon-juniper habitats and shrublands remains intact. It has a mostly natural fire regime. There are numerous perennial stream channels throughout the area including Trail Creek and Buffalo Creek. Dry Creek is a major intermittent channel. Soils are likely at the desired condition. There is localized soil compaction from wild horses and livestock in riparian areas. The air quality is excellent. Watershed restoration treatments in meadows on Trail Creek included

meadow headcut treatments with filter cloth and rock. There is an historic mining dam on Trail Creek. There are many old structures related to mining activity in the Queen Canyon area, which substantially affect the appearance of naturalness. The invasive cheatgrass is stable. Brook and rainbow trout were introduced into previously fishless waters, are self-sustaining populations, and have displaced endemic species. Queen Canyon Road and mine area are likely visible from in the northeastern portion of the polygon. There is a major community development, White Mountain Estates, along Middle Creek, in the southeast, outside of the polygon and forest boundary. There is a small private land parcel to the northwest, Orchard Springs, outside of the polygon.

Opportunities for Solitude or Primitive and Unconfined Recreation

There are steep canyons along the north and east side of the White Mountains. There is steep terrain, especially south of Trail Canyon. There is good screening. Recreation use is focused in the area related to the Boundary Peak Wilderness and along roads and motorized trails. There are authorized forest system roads that form the northern and eastern border, many that cherry stem the polygon. There are two areas of authorized motorized trails within the polygon. Opportunities of solitude or primitive and unconfined recreation are limited motorized areas, including near Queen Canyon Road (the northern half is largely along slopes above the road) and Trail Canyon Road. Most use is limited to the two trails approaching Boundary Peak, Queen Canyon route or Trail Canyon route, and visitors exploring the mine areas. There are opportunities for primitive-type recreation activities, including cross-country hiking, hunting and general forest exploration with some degree of challenge due to remoteness and steep terrain features.

Other Features of Value

The area includes bristlecone pine above Queen Canyon and is a sage grouse priority habitat. There are rare and distinctive plants, including fishhook cactus. It has variable geology, including granitic and volcanic that form distinct visuals in Queen Canyon. The area is largely unsurveyed for cultural resources. The few documented sites include two large historic mining centers with mill remains, foundations, stone structures, adits and mining and living refuse, as well as evidence of prehistoric occupation and use including bedrock mortars and lithics.

Manageability

This polygon is narrow, elongated strip (typically one mile wide) adjoining the Boundary Peak Wilderness. Most of the northern portion of the polygon is within one mile of Queen Canyon Road. The southern portion, south of Trail Canyon is generally more than one mile from a road and separated by a ridge as well. The polygon is irregularly shaped along the eastern perimeter due to many cherry stem roads. The cherry stem road in Trail Canyon nearly splits the polygon in half. There are two motorized trails within the polygon. Old mining roads and mine ruins are scattered throughout the northern portion of the polygon, especially evident in Queen Canyon. Old mining roads will remain on the landscape for hundreds of years unless rehabbed prior to designation. There is a major community development, White Mountain Estates, along Middle Creek, in the southeast, outside of the polygon and forest boundary. There is a small private land parcel to the northwest, Orchard Springs, outside of the polygon. The area contains priority habitat for sage grouse, which may require management activities inconsistent with wilderness. Current uses in the area include grazing and guided hunting. There are also wild horses in the area, which may require management activities inconsistent with wilderness. There are six water rights.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited in some areas due to an extensive network of authorized forest system roads around the perimeter of the polygon. There are two areas with authorized motorized trails in the polygon. Sight and sounds would likely penetrate these portions of the polygon. The appearance of naturalness is affected in the Queen Canyon area, in the northern portion of the polygon, due to substantial mining developments. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 2,388 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 3,500 acres. The polygon has the potential to be reshaped to exclude motorized trails and developments that are substantially noticeable.

Polygon 1326 (Queen Valley)

General Description

Polygon 1326 (Queen Valley) consists of 5,464 acres with elevations ranging from 6,400 to 8,800 feet. It is located on the east side of the White Mountains, southeast of Highway 6, and includes Queen Valley, Sagehen Flat and Mustang Point at 9,689 feet in elevation (Figure B-5, Inyo National Forest evaluation map C). The polygon is shaped by roads and private land parcels that create a polygon with many narrow appendages.

National Vegetation Classification System data indicates 37 percent of the area of the polygon (2,027 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. Each of these ecological groups, however, comprises less than 1,000 acres in this polygon. An additional 3,000 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands, and blackbrush. Topography along the northwest side is moderate angle alluvial fans, leading to steep-walled canyon and 9,000 foot peaks on the east side. A portion of the polygon intersects with the Sugar Loaf Inventoried Roadless Area. It is White Mountain Horse Territory. There is moderate screening. Except for canyons, Highway 6 is visible from much of the area. The developments in Queen Valley Ranch (Hereford Valley Ranch), including roads, are also visible in some areas. There has been some alteration to natural conditions from historic mining, wild horses and livestock grazing. There is substantial evidence of historic mining with structures in various states of disrepair. There is an old stamp mill that is in good condition near Sugarloaf. The United States Geological Survey map shows an aqueduct and pond. Invasive plant species are present, including cheatgrass and halogeton, both of which are increasing. Wild horses are not native, but occur in the area and are associated with soil compaction. There are non-native aquatic species (gambusia fish and mosquito fish) in spring channels that affect the natural endemic distribution of macro-invertebrate species. There is little surface water in the area. Riparian vegetation is in canyons and Brownie Creek. The air quality is good.

Opportunities for Solitude or Primitive and Unconfined Recreation

Highway 6 is visible from much of the area. The developments in Queen Valley Ranch (Hereford Valley Ranch), including roads, are also visible in some areas. There are sights and sounds present from outside the area, especially along the western portion of the polygon, where the presence of Highway 6 is highly evident. The area is remote with very little recreation use. There is moderate opportunity for primitive or unconfined recreation activities, such as cross-country hiking and general forest exploration with some degree of challenge due to the remote location and rugged terrain, but it is not very attractive due to lack of water.

Other Features of Value

Sugarloaf is a unique geologic feature, but with historic gold mining developments. Although unique for the White Mountains, it is not unique for the Great Basin. The area includes a sensitive plant, *Mono phacelia* and is a sage grouse proposed critical habitat. Historic mining ruins have not been formally documented as cultural properties. There is an old stamp mill that is in good condition near Sugarloaf. Historic trash scatters and prehistoric lithic scatters are also present in the area. It is White Mountain Horse Territory.

Manageability

The polygon has an irregularly shaped boundary due to the presence of private land parcels (Queen Valley Ranch and Montgomery Pass), as well as cherry stem roads. Highway 6 is within a half mile of the polygon and highly visible from much of the area. The area contains priority habitat for sage grouse, which may require management activities inconsistent with wilderness. There are no known water rights; however, the United States Geological Survey map shows an aqueduct and pond with levee. The area is a proposed critical habitat for sage grouse.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are many old structures related to historic mining in the Sugarloaf and Queen Canyon area, which substantially affect the appearance of naturalness. Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads around the perimeter, proximity to Highway 6, and private land developments; sight and sounds would likely penetrate the eastern portion of the polygon. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 2,027 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 3,000 acres. There is not a potential to reshape the polygon.

Polygon 1332 (Pizona South, Northwest of Highway 6)

General Description

Polygon 1332 (Pizona South, Northwest of Highway 6) consists of 5,244 acres with elevations ranging from 6,400 to 7,600 feet. It is located northwest of Highway 6 and southeast of Truman Meadows and includes West Queen Canyon (Figure B-5, Inyo National Forest evaluation map C). It is shaped by roads and private land parcels that dissect to form many narrow appendages.

National Vegetation Classification System data indicates 44 percent of the area of the polygon (2,300 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is inter-mountain

basins big sagebrush shrubland. An additional 2,800 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands and blackbrush. It is a sage grouse priority habitat. The terrain includes steep south facing slopes with many short steep canyons. The polygon is not within an inventoried roadless area. This area has limited habitat fragmentation and the connectivity between pinyon-juniper habitats and shrublands remains intact. There is little to no surface water, primarily ephemeral stream channels. In some areas pinyon pine expansion is evident, and in other areas pinyon pine removal is noticeable where chaining treatments were used. It is within a wild horse management area (fences, corrals). Historic mining sites are substantially noticeable, including abandoned tailing piles and altered species composition. Invasive plant species are abundant, particularly on the south-facing slopes (cheatgrass and halogeton). Wild horses impact meadows and riparian areas. There are good soil conditions. There is good air quality, with likely limited impacts from Mono Basin to the west of this area.

Opportunities for Solitude or Primitive and Unconfined Recreation

The opportunity for solitude or primitive and unconfined recreation is very limited because Highway 6 is highly visible and can be heard from within the area. Roads, highways or mining activities are within less than a mile in most of the area. There is low to moderate potential for encounters. The potential is lower in winter because snow and slippery soils on roads reduce access. There is opportunity for mineral prospecting.

Other Features of Value

The area is a sage grouse priority habitat and populations of the sensitive plant species, *Mono phacelia*, occur in the polygon. Documented cultural properties include prehistoric rock rings, prospects and trash associated with historic mining activities. Cultural sites are being preserved in their current condition.

Manageability

This polygon is shaped by roads and private land parcels that dissect to form many narrow appendages, and in some places the polygon is not more than half mile wide. There is a large parcel of private land to the northwest which protrudes into the area that is undeveloped. There may be patented mining claims. The area contains priority habitat for sage grouse. The area occurs within the Montgomery Wild Horse Management Area, which may require fencing, corrals, and helicopter use.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to Highway 6 and an extensive network of authorized forest system roads along the boundary; their sight and sounds would likely penetrate most of the polygon. The appearance of naturalness is substantially affected in areas by historic mining activities and pinyon pine removal by chaining. The area occurs within the Montgomery Wild Horse Management Area, which may require fencing, corrals, and helicopter use. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System.

Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 2,300 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 2,800 acres. The proximity to Highway 6, which is visible from much of the area, impacts the opportunity for solitude. There may be opportunity for primitive and unconfined recreation, but not much draw due to lack of water. The polygon has an irregularly shaped and narrow boundary due to the location of the private land parcel and short- spur cherry stem roads. This would make management of this area for wilderness characteristics difficult. There is not the potential to reshape the polygon to make it more suitable or manageable for wilderness.

Polygon 1339 (Pizona–Truman Meadows)

General Description

The Polygon 1339 (Pizona-Truman Meadows) consists of 19,826 acres with elevations ranging from 6,000 to 8,000 feet. It is located on the east side of the White Mountains, southeast of Highway 6, and includes Queen Valley, Sagehen Flat and Mustang Point at 9,689 feet in elevation (Figure B-4, Inyo National Forest evaluation map B). The polygon is shaped by the forest boundary and roads, including several that cherry stem to form the border.

National Vegetation Classification System data indicates 35 percent of the area of the polygon (6,974 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are inter-mountain basins big sagebrush shrubland and inter-mountain basins montane sagebrush steppe. An additional 12,600 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands and blackbrush. It is a sage grouse priority habitat. The topography includes moderate rolling hills, broad, open sagebrush flats, and ancient volcanic flows. The majority of the polygon intersects with Excelsior Inventoried Roadless Area. There are springs and canyons that have surface water, as well as riparian vegetation associated with springs. Highway 6 is visible from parts of the area and power lines are visible along the western perimeter. Developments include mining claims and a recently authorized exploration plan of operation; watershed treatments in Truman Meadow; historic military operations in which replica towns were constructed and destroyed; a windmill. The allotments are closed. Watershed treatments related to the road are present in Truman Meadow. They are not substantial, but noticeable when driving the road. The invasive cheatgrass is stable. Pinyon pine has expanded in range. There are non-native aquatic species (gambusia fish, mosquito fish) in spring channels, affecting the natural distribution of macro-invertebrate species. Wild horses impact meadows and riparian areas. Truman Meadow is stable. Work was completed on the road through the meadow to stabilize wet areas. There are good soil conditions, and the air quality is likely influenced by dust from Mono Basin to the west of this area. Mono Basin is in Non-attainment PM-10.

Opportunities for Solitude or Primitive and Unconfined Recreation

There is some screening present due to topography and vegetation. Highway 6 is visible and heard from many parts of this polygon. Power lines are adjacent to part of the western border. Sights and sounds from outside the area are minimal, with some lightly used roads adjacent to some borders. There is one short segment motorized trail within the eastern portion that accesses

Truman Springs. It provides access to a popular dispersed campsite. In addition, there are some motorized routes that are being used, and are being considered for addition to the forest's trail system. There is a low potential for encounters in the area. Although limited by the lack of water, there are likely opportunities for primitive-type recreation activities, including cross-country hiking, hunting, wild horse viewing and general forest exploration with some degree of challenge due to the remote location and rugged terrain.

Other Features of Value

The area includes dry alkali flats, which is a unique ecosystem type to the Inyo National Forest, and Great Basin springs. Wild horses occur in the area and there is sage grouse priority habitat. The rare plant, Parish's popcorn flower, grows within the polygon. There is a rare meadow feature for the area (Truman Meadow). One significant prehistoric site has been formally documented in the area. There are a lot of historic sites in the area (remnant rock foundations, stage coach lines) as well as some prehistoric sites.

Manageability

Some small parcels of non-Federal land are adjacent or along the border of the area (McBride Spring, Truman Meadows). The area occurs within the Montgomery Wild Horse Management Area, which may require fencing, corrals and helicopter use. Existing uses of the Federal land in the area include authorized outfitting and guiding related to wild horses, mineral exploration, and dispersed recreation (roads and motorized trails, camping). There is one motorized trail which is a short segment on the eastern edge that accesses Truman Springs and provides access to popular dispersed campsite and for outfitting and guiding. In addition, there are some motorized routes that are being used and considered for addition to the forest's trail system. There are mining claims and an exploration plan of operation was recently authorized.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are opportunities for solitude or primitive and unconfined due to low motorized use, however, opportunities for solitude or primitive and unconfined recreation are limited in the small area with the authorized motorized trail at the eastern edge of the polygon. The appearance of naturalness is somewhat affected by historic mining activities, Highway 6, power lines, and past vegetation treatment conducted by the military. This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 6,974 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 12,600 acres. There is not much potential to reshape the polygon.

Polygon 1342 (Montgomery Pass)

General Description

Polygon 1342 (Montgomery Pass) consists of 6,144 acres with elevations ranging from 6,600 to 7,200 feet. It is located on the east side of the White Mountains, southeast of Highway 6 and east of Montgomery Pass (Figure B-5, Inyo National Forest evaluation map C). The polygon is shaped by roads and private land parcels that form narrow appendages and some straight line borders.

National Vegetation Classification System data indicates thirty-5 percent of the area of the polygon (2,173 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is inter-

mountain basins big sagebrush shrubland. An additional 3,300 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper and xeric shrublands and blackbrush. There is limited seasonal surface water but riparian vegetation is found in the canyons. There are no meadows. This area has limited habitat fragmentation and the connectivity between pinyon-juniper habitats and shrublands remains intact. The area is a sage grouse priority habitat and part of the Montgomery Wild Horse Management Area. The area does not intersect with inventoried roadless area. The polygon is surrounded by roads and private development. A gypsum mine is visible. Highway 6 is located in the northwestern boundary and is visible from many parts of this polygon. Historic mining remnants are apparent. The invasive cheatgrass and halogeton are present and likely increasing. Pinyon pine has expanded due in part to fire suppression. The polygon is dissected in the eastern portion by an authorized motorized trail. There are non-native aquatic species (gambusia fish, mosquito fish) in spring channels that affect the natural endemic distribution of macro-invertebrate species.

Opportunities for Solitude or Primitive and Unconfined Recreation

Opportunities for solitude or primitive and unconfined recreation are limited due to an authorized motorized trail within the polygon, and Highway 6 and an extensive network of authorized forest system roads around the perimeter; sight and sounds would likely penetrate most of the polygon. The most remote areas are one mile from roads and developments. There is one cherry stem road and motorized trail that protrudes into the polygon along the eastern boundary. In addition, there are some motorized routes that are being used, and are being considered for addition to the forest's trail system. There is a moderate potential for encounters in the area. There may be opportunities for primitive-type recreation activities, including cross-country hiking, hunting and general forest exploration.

Other Features of Value

The area is a sage grouse priority habitat, including habitat surrounding a breeding area. The area includes the sensitive plant, *Mono phacelia* and the rare sagebrush cholla. Although the area is largely unsurveyed for cultural resources, documented properties include prehistoric rock ring and lithic scatter sites.

Manageability

The polygon is shaped by private land parcels and short spur roads that protrude into the polygon, there is one large parcel of non-Federal land along the western border of the area (Montgomery Pass). The area contains priority habitat for sage grouse and occurs within the Montgomery Wild Horse Management Area that includes fencing, corrals and helicopter use. There is an authorized motorized trail in the northeastern corner of the polygon. In addition, there are some motorized routes that are being used, and are being considered for addition to the forest's trail system.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to an authorized motorized trail within the polygon, and Highway 6 and an extensive network of authorized forest system roads around the perimeter; sight and sounds would likely penetrate most of the polygon.

The most remote areas are approximately one mile from the road system. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 2,173 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 3,300 acres. There is not much potential to reshape the polygon.

Polygon 1355 (Excelsior Mountains- Adobe Hills)

General Description

Polygon 1355 (Excelsior Mountains-Adobe Hills) consists of 10,297 acres with elevations ranging from 7,200 to 7,600 feet. It is located in the Excelsior Mountains, north of Adobe Lake, within the Adobe Hills (Figure B-4, Inyo National Forest evaluation map B). The polygon is shaped by roads, the California-Nevada state line, and the forest boundary.

National Vegetation Classification System data indicates 31 percent of the area of the polygon (3,165 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is inter-mountain basins big sagebrush shrubland. An additional 7,100 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The topography consists of low rolling hills comprised largely of pinyon-juniper woodland, which has expanded due in part to fire suppression. The majority of the polygon intersects with Excelsior and Huntoon Inventoried Roadless Areas. This area has limited habitat fragmentation and the connectivity between pinyon-juniper habitats and shrublands remains intact. There are no grazing allotments in this area, but the area does overlap the Montgomery Wild Horse Territory and the appearance of naturalness is somewhat affected by wild horse expansion. There is limited water with a few intermittent and ephemeral stream channels. The air quality is good; not excellent due to dust from Mono Basin, which is Non-attainment for PM-10.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is remote, with low recreation use and has good opportunities for solitude and primitive and unconfined recreation. The majority of the polygon is managed as inventoried roadless area. Lightly traveled roads and transmission lines are visible from in some areas of the polygon. Recreation opportunities may be limited by the lack of available water. There is some visibility down to Highways 6 and 120 from parts of this polygon, with visitors able to hear traffic from some areas of the polygon. There is a high opportunity to engage in primitive or unconfined recreation activities, including cross-country hiking, hunting, wild horse viewing, and general forest exploration with some degree of challenge due to the remote location. There is lower recreation use in winter.

Other Features of Value

There are dry alkali lakes, a unique ecosystem type to the Inyo National Forest. There are some sand dunes in this polygon, a unique geologic feature, with two rare but not sensitive plant species: globe spring parsley, and dune horse brush. There is likely a nice view of Mono Lake from top of Adobe Hills.

Manageability

The polygon is primarily bordered by Federal land, including the Inyo National Forest, Humboldt-Toiyabe National Forests and Bureau of Land Management, and by roads and the forest boundary. There is also a transmission line along the western perimeter. The area occurs within the Montgomery Wild Horse Management Area, which may require management activities for wild horses that may be inconsistent with wilderness, including fencing, corrals and helicopter use. This area is adjacent to an inventoried roadless area on the Humboldt-Toiyabe National Forests.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The polygon is bounded by lightly traveled roads and a power line corridor; however, the area is remote and has good opportunity for solitude or primitive and unconfined recreation. Available water is limited. The majority of the polygon is managed as inventoried roadless area. Highways and transmission lines are visible from the polygon. Managing the polygon to preserve its wilderness characteristics would be affected by overlap with the Montgomery Wild Horse Management Area; management includes fencing, corrals, and potential helicopter use. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 3,165 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 7,100 acres. There are limited opportunities to redraw the polygon.

Polygon 1357 (Excelsior Mountains)

General Description

Polygon 1357 (Excelsior Mountains) consists of 5,805 acres with elevations ranging from 7,000 to 7,500 feet. It is located in the Excelsior Mountains, north of Adobe Hills (Figure B-4, Inyo National Forest evaluation map B). The polygon is somewhat narrow and elongated.

National Vegetation Classification System data indicates 52 percent of the area of the polygon (3,030 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is inter-mountain basins big sagebrush shrubland. An additional 2,800 acres consists of Great Basin pinyon-juniper, which has less than 15 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands and blackbrush. Pinyon pine has expanded due in large part to fire suppression. The topography is characterized by low rolling hills mostly comprised of pinyon woodland and shrublands. The majority of the polygon intersects with Excelsior Inventoried Roadless Area. This area has limited habitat fragmentation and the connectivity between pinyon-juniper habitats and shrublands remains intact. There are no grazing allotments in this area. The area does overlap the Montgomery Wild Horse Territory. There is a departure from natural conditions due to the expansion of wild horses. Wild horses have expanded heavily into this area. Their effects are not natural in this ecosystem. There is limited water. No meadows or riparian areas are known. Soils are likely at desired condition. The

air quality is good but may be affected by dust from Mono Basin. Mono Basin is nonattainment for pm10. The area remains largely unsurveyed for cultural resources, but there is a documented prehistoric site.

Opportunities for Solitude or Primitive and Unconfined Recreation

The majority of the polygon is managed as inventoried roadless areas. There is a high opportunity for solitude or primitive and unconfined recreation activities, including cross-country hiking, hunting, wild horse viewing and general forest exploration. The area has low recreation use due to remoteness and limited water. The power line corridor is visible from some of the area due to minimal topographic relief, likewise the sound of traffic from the roads. The interior of the polygon is within one mile of roads, which surround the polygon on all sides. There is lower use in winter.

Other Features of Value

There are dry alkali lakes which are a unique ecosystem type to the Inyo National Forest. Populations of two different Forest Service sensitive species, Williams combleaf and Long Valley milkvetch, are found here. The area occurs within the Montgomery Wild Horse Management Area, which may require management activities for wild horses that may be inconsistent with wilderness, including fencing, corrals and helicopter use. There are unique and interesting views to the dry lakebeds of Adobe Valley.

Manageability

The polygon is elongated and narrow and surrounded by a road system. The interior of the polygon is generally less than a mile from a road. There is also a transmission line along the western perimeter. The area occurs within the Montgomery Wild Horse Management Area, which may require management activities for wild horses that are inconsistent with wilderness, such as fencing, corrals and helicopter use.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The majority of the polygon intersects with Excelsior Inventoried Roadless Area. There is a high opportunity for solitude or primitive and unconfined recreation activities, including cross-country hiking, hunting, wild horse viewing and general forest exploration. The area has low recreation use due to remoteness and limited water. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 3,030 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 2,800 acres. The area is bounded roads and a power line corridor. There is not much potential to reshape the polygon.

Polygon 1361 (Excelsior Mountains–Huntoon Creek)

General Description

Polygon 1361 (Excelsior Mountain-Huntoon Creek) consists of 8,855 acres with elevations ranging from 7,200 to 7,800 feet. It is located in the Excelsior Mountains and includes Huntoon Creek (Figure B-4, Inyo National Forest evaluation map B). The polygon is somewhat narrow and elongated and follows the forest boundary and the California-Nevada state line.

National Vegetation Classification System data indicates 35 percent of the area of the polygon (3,066 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is inter-mountain basins big sagebrush shrubland. An additional 5,700 acres consists of Great Basin pinyon-juniper woodland, which has less than 15 percent of its national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands and blackbrush. It is a sage grouse priority habitat. The topography is characterized by low rolling hills mostly comprised of pinyon woodland and shrublands. The majority of the polygon intersects with Excelsior and Excelsior Mountains Inventoried Roadless Areas. This area has limited habitat fragmentation and the connectivity between pinyon-juniper habitats and shrublands remains intact. There are no grazing allotments in this area. The area does overlap the Montgomery Wild Horse Territory. There is a departure from natural conditions due to the presence of wild horses that have expanded heavily into this area. There is limited water. Huntoon Creek is an intermittent stream that flows through the area. There are no meadows and there are limited or no riparian areas present. Soils are likely at desired condition. The air quality is good but may be affected by dust from Mono Basin. Mono Basin is nonattainment for pm10.

Opportunities for Solitude or Primitive and Unconfined Recreation

This polygon is very remote, with the potential for good solitude. There is moderate screening. The power line corridor may be visible from some of the area. Visitors may also be able to hear traffic from the roads that are located along the northern, western and southern perimeters. There is a high opportunity to engage in primitive or unconfined recreation activities, including cross-country hiking, hunting, wild horse viewing and general forest exploration with some degree of challenge due to the remote location. Currently, the area has low recreation use due to remoteness of the area and limited water. There is lower use in winter.

Other Features of Value

The area is a sage grouse priority habitat. This area remains largely unsurveyed for cultural resources. Documented sites include one prehistoric lithic scatter and one historic mining site (tailing piles).

Manageability

The polygon is somewhat narrow and elongated, particularly the southeastern half, due to the forest boundary. The polygon is primarily bordered by Federal land (Inyo National Forest, Humboldt-Toiyabe National Forests, and the Bureau of Land Management). The area is bounded by roads along the northern, western and southern perimeters and the forest boundary along the eastern perimeter. There is also a transmission line along the western perimeter. There is one private land inholding (40-acre parcel) in the southwestern corner of the polygon. The land owner is unknown, as is access to the private land parcel. The area occurs within the Montgomery Wild Horse Management Area, which may require management activities for wild horses that may be inconsistent with wilderness, including fencing, corrals and helicopter use. The area contains priority habitat for sage grouse, which may require management activities inconsistent with wilderness. This area is adjacent to an inventoried roadless area on the Humboldt-Toiyabe National Forests.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This polygon is very remote, with potential for opportunities for solitude or primitive and unconfined recreation. Opportunity for primitive and unconfined recreation may be limited by the lack of available water. Opportunities for solitude may be limited by Forest system roads along the periphery, and transmission lines that are visible from within the polygon. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 3,066 acres. An ecological group with less than 15 percent of its national extent in the National Wilderness Preservation System comprises an additional 5,700 acres. Managing the polygon to preserve its wilderness characteristics would be affected by overlap with the Montgomery Wild Horse Management Area: management actions include fencing, corrals, and potential helicopter use. There may be the potential to reshape this polygon to make it suitable or manageable for wilderness character.

Polygon 1376 (Watterson Meadow and Benton Range)

General Description

Polygon 1376 consists of 9,922 acres with elevations ranging from 6,800 to 8,000 feet. It is located within the Benton Range, east of Banner Ridge and includes Watterson Meadow (Figure B-4, Inyo National Forest evaluation map B). The polygon is shaped by roads, a private land parcel and the forest boundary with Bureau of Land Management. It is bisected by motorized trails, which run east to west through the middle of the polygon.

National Vegetation Classification System data indicates 15 percent of the area of the polygon (1,499 acres) consists of ecological groups that have less than 10 percent of their national extent protected in the National Wilderness Preservation System. None of these ecological groups, however, comprise at least 1,000 acres in this polygon.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands and blackbrush. The topography includes broad, open sage flats with rocky-topped ridges and exposed granite faces. The area contains pinyon pine and sage brush. The polygon intersects with the Benton Range Inventoried Roadless Area. Kelty Canyon runs through the far northwest part of this unit and likely runs water all year. There are many prominent intermittent stream channels.

There are authorized motorized trails within and bisecting the polygon. In addition, there is a paved road and an extensive network of authorized forest system roads along the perimeter. A few forest system roads cherry stem to form the boundary. There are mining site developments that include prospects, tunnels, and shafts in the perimeter, accessed by motorized trails and roads. There is a grazing allotment with fences and a windmill. There is a popular climbing area near Wildrose Summit with permanent anchors. The area is largely unsurveyed for cultural resources; however there are prehistoric lithic scatters, rock rings, a rock shelter, milling features and historic refuse known to exist in the area. There are few invasive plant species, which are stable. A mapped meadow is present in Kelty Canyon and riparian vegetation is present in canyons. The air quality is excellent. Pinyon pine expansion has occurred in some areas.

Opportunities for Solitude or Primitive and Unconfined Recreation

The topography is highly variable, but generally includes broad, open sage flats with rocky-topped ridges and exposed granite faces. Topography and vegetation provide screening and the distance from impacts and developments is one to three miles from road systems, Benton Crossing Road and Highway 120 (the northwestern boundary is Benton Crossing Road). From much of the area, paved or unpaved roads, power lines and highways can be seen in mid-distance. The potential for encounters with other users is low within the interior and moderate around the perimeter and climbing area. Motorized trails bisect the polygon. There are several roads and a private land parcel that penetrate the perimeter of the polygon. The proximity to roads and motorized trails, and the visibility to developments limit the opportunity for solitude or primitive and unconfined recreation. There are likely some opportunities for primitive-type recreation activities, including cross-country hiking and general forest exploration with some degree of challenge due to rugged terrain.

Other Features of Value

The area has outstanding views of the White Mountains and unique granite faces and high rocky outcrops. It is within priority habitat for sage grouse. The area is largely unsurveyed for cultural resources; however there are prehistoric lithic scatters, rock rings, a rock shelter, milling features and historic refuse known to exist in the area.

Manageability

The polygon is irregularly shaped, with a few cherry stem roads and a private land parcel that protrudes into the area at several locations. The northern and eastern boundaries are the straight line forest boundary with Bureau of Land Management. The northwestern boundary is the Benton Crossing Road. There is a motorized trail that runs east to west into the central portion of the polygon. The area contains priority habitat for sage grouse, which may require management activities inconsistent with wilderness.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to authorized motorized trails within the polygon, and a paved road and an extensive network of authorized forest system roads along the perimeter. A few forest system roads cherry stem to form the boundary. Sight and sounds would likely penetrate large portions of the polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 1,499 acres. Because of the proximity to the road and motorized trail system, including the road system on adjacent Bureau of Land Management lands, there is not the opportunity to reshape the polygon to make it more suitable or manageable for wilderness character.

Polygon 1391 (Monache, Blackrock and South Sierra East)

General Description

Polygon 1391 (Monache, Blackrock and South Sierra East) consists of 50,992 acres with elevations ranging from 4,500 to 9,400 feet. This U-shaped polygon (Figure B-11, Inyo National Forest evaluation map I) is 50,992 acres, and connected by a narrow sliver that follows the Kennedy Meadows Road along the southern boundary. It includes two distinct geographic areas divided by the South Sierra Wilderness. The western portion of the polygon includes the

Monache and Blackrock area. The eastern portion of the polygon is located east of the South Sierra Wilderness and referred to as South Sierra East. This polygon crosses the forest boundary between the Inyo (33,247 acres) and the Sequoia (17,745 acres) National Forests. The polygon was evaluated as one whole unit containing the portions on both forests.

National Vegetation Classification System data indicates 14 percent of the area of the polygon (3,556 acres) consists of an ecological group, inter-mountain basins big sagebrush shrubland, which has less than 10 percent of its national extent protected in the National Wilderness Preservation System. An additional 14,000 acres consists of Great Basin pinyon-juniper woodland and Rocky Mountain aspen forest and woodland, which have less than 15 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Western Portion

Monache and Blackrock, the northwest corner, is contiguous to the Golden Trout Wilderness and the eastern boundary is contiguous with the South Sierra Wilderness. It is located in the Monache area, between Monache Cabin on the north and Blackrock on the south. This portion of the polygon is irregularly shaped due to cherry stem roads that protrude well into the polygon, splitting the polygon nearly in half in some places, particularly the cherry stem road in the southern half of the polygon. There are also motorized trails present within the polygon, particularly in the southern half. There is a 75-yard wooden causeway on motorized trail 35E401. The northern portion of the polygon intersects with the South Sierra Inventoried Roadless Area. Ecosystem types include red fir, sagebrush, subalpine forest and white fir. The topography includes gentle to moderate slopes. Grazing occurs in the Monache area and there has been some headcut and stream improvement work completed. There are range improvements, including pasture fences in the Soda Creek area.

Eastern Portion

South Sierra East, the southwest corner is contiguous to the Sacatar Trail Wilderness (Bureau of Land Management) and the western boundary is contiguous with the South Sierra Wilderness. Located east of the South Sierra Wilderness, the area includes Olancha Trailhead, Haiwee Pass Trailhead, Talus Canyon, Long Canyon, Tunawee Canyon and Kennedy Meadows Trailhead. The polygon is elongated horizontally, following the boundary of the existing wilderness. The northern portion near Olancha and the southern portion near Kennedy Meadows are narrow due to the buffer between the road and existing wilderness boundary. The majority of the polygon intersects with the South Sierra Inventoried Roadless Area. Ecosystem types include Jeffrey pine, mountain mahogany, pinyon-juniper, sagebrush, white fir and xeric shrublands and blackbrush. This polygon contains true Mojave Desert ecosystems which are largely intact including Joshua trees, cholla cactus, creosote, plus healthy canyon live oak ecosystems and pinyon-juniper. The topography is characterized as Eastern Sierra escarpment with steep slopes and forested canyons. Perennial streams include Hogback Creek, Haiwee Creek and Talus Canyon. Riparian areas contain canyon live oak and are in good condition. There are perennial (mostly) channels including Soda Creek and Snake Creek, and springs and meadows are present throughout the area. Vegetation is in good to excellent condition. The air quality is nonattainment for ozone (Tulare County).

There are recreation developments in the eastern portion of the polygon. There is a spring box and water system for Kennedy Meadows Campground and existing dirt road access to Wildrose Trailhead. There is dispersed camping and a dirt parking area at the trailhead. There are range

improvements within the polygon. There is drift fence at the Olancha Pass Trailhead area, Wildrose Trail, and Pacific Crest Trail north of Kennedy Meadows campground. The Los Angeles Department of Water and Power has infrastructure in Haiwee Canyon. Compaction in meadows and the sod layer appears to be less than desired condition in several meadows. Hummocks are present in wet and spring areas. There was fire (Clover Fire in 2008) and a flood event (2010) that impacted Haiwee Canyon.

Opportunities for Solitude or Primitive and Unconfined Recreation

Western Portion

Within the western portion of the polygon (Monache and Blackrock), the topography is gentle to moderate slopes. There is some screening from trees and topography, but a portion of the area is bordered by heavily used authorized forest system roads and authorized motorized trails. The Monache area is a multiple use recreation area, popular for off highway vehicle recreation and dispersed camping, primarily during the summer and fall months. The area is also popular for hunting during the fall months. The occasional to frequent off highway vehicle traffic limits the opportunity for solitude or primitive and unconfined recreation. There is no area free from motorized noise in the southern, eastern and northern portions of the polygon. There may be an area free from motorized noise in the western portion, adjacent to the Golden Trout Wilderness. The potential for encounters with other visitors is low to medium, with most of the use focused around roads, trails and the river corridor. Current primitive recreation activities in this area include hiking, backpacking and horseback riding on one forest system trail that accesses the Golden Trout Wilderness; fishing on the South Fork Kern River and deer hunting in the fall. There are some opportunities for wildlife observation, photography and enjoying nature on Monache Mountain. Access for winter cross-country skiing is challenging because this area is at least 25 miles from a plowed road.

Eastern Portion

Within the eastern portion of the polygon (South Sierra East), there is screening from vegetation and topography. Highway 395 is visible along the eastern boundary, but not highly visible. Most of area is several miles from any development and there is little evidence of civilization. A portion is adjacent to developments at Walker Creek, Olancha Pass Trailhead, Sage Flat (private property), Kennedy Meadows Campground and Tunawee (private property). There are some areas that have existing uses that would limit the opportunity for solitude: dispersed camping and off highway vehicle use on 19S01 (Walker Creek area); dispersed camping and trailhead at Olancha Pass Trailhead; sounds from private residences at Sage Flat; and Kennedy Meadows Campground (paved road and campground noise). The potential for encounters with other visitors is low, based on the low number of current visitors to the South Sierra Wilderness. Current primitive recreation activities in this area include hiking, backpacking and horseback riding on several forest system trails that cross the polygon and access the South Sierra Wilderness and deer hunting in the fall. Most of the recreation use is concentrated near Olancha Pass, Kennedy Meadows (Pacific Crest Trail) and Wildrose Trail. The Pacific Crest Trail north of Kennedy Meadows sees large numbers of through-hikers in May and June. The degree of challenge along trails is similar to the adjacent wilderness, except that the challenge is greater on the Haiwee Trail because of extensive flash flood damage. Travel along or up the steep eastern escarpment of the Sierra Nevada would be challenging because there are no trails and surface water can be scarce. The portion of the area near the South Fork Kern River is a popular primitive recreation area during spring, summer and fall months. There are opportunities for wildlife observation, photography and enjoying nature. Due to unreliable snowpack, this area is not suitable for cross-country skiing.

Other Features of Value

Western Portion

The western portion of the polygon contains the sensitive plant, Kern milkvetch and the rare plants, mountain yellow violet and field ivesia. Monache Mountain, a unique volcanic feature, is located in this area. Roughly 20 percent of the area has been surveyed for cultural resources and more than 30 properties have been documented, which include prehistoric artifact scatters and one historic debris scatter.

Eastern Portion

The eastern portion of the polygon contains Mojave Desert and oak woodlands. True Mojave Desert and oak woodland ecosystems are largely intact and include Joshua trees, cholla cactus, creosote, plus healthy canyon live oak ecosystems and pinyon-juniper. The area provides rare habitat for a butterfly species of concern, and has habitat for springsnails and the Kern slender salamander. Sierra Nevada bighorn sheep are in the northern portion of the polygon. The area includes the rare plants, Kern Canyon clarkia and Charlotte's phacelia. It contains the northern most population of silk tassel bush (uncommon on the east-side). Very little of the area has been surveyed for cultural sites; fewer than 10 properties are known, including remains of a historic corral, historic ditch, historic refuse scatters, and numerous prehistoric artifacts scatters and milling stations.

Manageability

Western Portion

The western portion of the polygon is irregularly shaped due to cherry stem roads (including Monache Jeep Road), as well as cherry stem roads in the southern half of the polygon. These cherry stem roads protrude into the polygon, nearly splitting it half in places. There are authorized motorized trails within the area. The Monache area is a popular off highway vehicle recreation area, and includes roads for four wheel drive vehicles, as well as single-track motorcycle trails. There is a private land parcel along the northeastern perimeter (Anchor Ranch). There is a special use permit for a water diversion for one of the cabins that is located on private land.

Eastern Portion

The eastern portion of the polygon follows the eastern boundary of the South Sierra Wilderness and the straight-line forest boundary along the southern and eastern perimeter. There are very few cherry stem roads that protrude into the polygon; mostly short spurs along the western perimeter (Haiwee Pass Trailhead, 0.9 miles; 21S101, 0.9 miles; and Tunawee, 0.5 miles). The northern portion of the polygon is narrow and elongated north to south, and there is a buffer between the road system and existing wilderness boundary. The southwestern perimeter is narrow and elongated west to east, and there is a buffer between Kennedy Meadows road and existing wilderness boundary. The remaining areas of the polygon are up to four miles across, with little to no development or permanent intrusions. The polygon borders both the South Sierra Wilderness and the Sacatar Trail Wilderness (Bureau of Land Management). Grazing occurs in the eastern portion of the polygon, as well as on adjacent Bureau of Land Management lands. Talus Canyon, Dunmovin spring box, but there is no record of water rights. The Los Angeles Department of Water and Power has infrastructure in Haiwee Canyon.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Western Portion

In, Monache and Blackrock, there are opportunities for solitude or primitive and unconfined recreation in a few specific areas. There are limited opportunities for solitude or primitive and

unconfined recreation in others due to extensive networks of authorized motorized trails, areas with high recreation use, forest system roads or paved roads.

Eastern Portion
In South Sierra East, there are intact true Mojave Desert and oak woodland ecosystems. There are opportunities for solitude or primitive and unconfined recreation in most areas, and limited opportunities in others due to authorized motorized trails or areas with high recreation use or paved roads. Because of adjacency to existing wilderness, and the many intact and unique vegetation features, this portion of the polygon has the potential to be reshaped to exclude developments that are substantially noticeable and existing uses that limit the opportunity for solitude.

Entire Polygon
This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 3,556 acres. Ecological groups with less than 15 percent of their national extent in the National Wilderness Preservation System comprise an additional 14,021 acres. The northern and southwestern portion of the polygon is a narrow buffer between existing wilderness and the road system, which affects manageability. The remaining polygon area east of South Sierra Wilderness has the potential to be reshaped, particularly adjacent to existing wilderness.

Polygon 1550 (McBride Flat)

General Description

Polygon 1550 (McBride Flat) consists of 12,198 acres ranging in elevation from 7,000-8,400 feet located in the southern end of the Excelsior Mountain area, north of the Pizona area, southeast of Mono lake, and just south of the Forest Service boundary between the Inyo and Humboldt-Toiyabe National Forests (Figure B-4, Inyo National Forest evaluation map B. The polygon is horizontal in shape with designated roads bordering the west, south, and eastern edges. One motorized trail (one mile long) is located in the northwestern portion of the polygon.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The ecosystem consists of a mosaic of pinyon-juniper woodlands and sagebrush flats, with some small alkali meadows. The area is within the Pizona-Truman Pinyon Pine Volcanics TEUI landtype association. It includes a combination of mafic and felsic volcanic geology with very deep soils present almost exclusively on the Forest in the northern Glass Mountains and Pizona Area. The polygon is located within the Excelsior Inventoried Roadless Area in California. The Nevada portion of the polygon was not included in the inventoried roadless process because at that time (1970) it was not managed by the forest. The polygon is comprised largely of pinyon-juniper woodland. There are relatively few invasive plant species. Cheatgrass may be present, but in small amounts and concentrated around roads. There is a departure from natural fire regime in some places as evidenced by pinyon pine expansion. This area has limited habitat fragmentation and the connectivity between pinyon-juniper habitats and shrublands remains intact. There are no grazing allotments in this area. The area does overlap the Montgomery Wild Horse Territory; wild horses have expanded heavily in this area. There is limited water with a few intermittent and ephemeral stream channels. These are of unknown condition. Soils are likely at desired condition. The air quality is good, with dust from Mono Basin.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area consists of canyons within the pinyon-juniper woodland, with sagebrush in the lower and higher elevations where the topography is relatively flat and open. Screening is relatively high within the canyons and pinyon-juniper woodlands. There is one motorized trail located in sagebrush, where the effect of sound and visuals would be greater. However, the trail ends in pinyon-juniper and is only one-mile long. There are no other motorized trails within the polygon. Designated roads are located on the west, south, and eastern boundaries and may have some impacts to the opportunities for solitude or primitive and unconfined recreation; however, with the high screening and cover of pinyon-juniper, these effects would be minimal within the center of the polygon. The potential for encounters is low and is mostly concentrated around the roads where dispersed recreation activities may occur.

There are no permanent or temporary structures or improvements located within this area. The area is largely undeveloped and there is opportunity for primitive-type recreation activities, such as cross-country hiking, but backpacking may be limited due to the lack of water sources. Winter recreation is limited by snow levels, topography, vegetation, and access.

Other Features of Value

This area does contain habitat for several sensitive plant species: *Plagiobothrys parishii* (Parish's popcornflower) is known to occur in this area; there is habitat for sensitive *Phacelia monensis* (*Mono phacelia*), Masonic Mountain jewelflower (*Streptanthus oliganthus*), and William's combleaf (*Polyctenium williamsiae*), but no populations are known.

The area does contain playas which offer habitat to sensitive plant species, fairy shrimp, and foraging stop-overs for migratory birds. Antelope are also known to occur in this area, a species whose range includes the Inyo National Forest, but is rare in this area. Montgomery Pass Wild Horse Territory is also in this area. Active management, including gathers with the use of helicopters, is needed to maintain the herd at the designated animal management level (AML). The area is largely unsurveyed for cultural resources. The few sites known are dense prehistoric toolstone scatters, one of which includes rock wall hunting blind features.

Manageability

As mentioned above, there is one motorized trail located in the northwestern portion of the polygon. Designated roads border the west, south, and east-portions of this polygon. No timber, vegetation treatments, special uses, or lands activities occur within this area that would require additional access. Management activities for wild horses occur in this area which could include the use of a helicopter. Although there is access to this area, it is not located adjacent to other designated land allocations, such as wilderness or Research Natural Areas. The remoteness of this area may inhibit the manageability of this area as wilderness.

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This area is remote and undeveloped with good opportunities for solitude or primitive and unconfined recreation through the majority of the polygon. Opportunities for solitude or primitive and unconfined recreation are limited in the areas of authorized motorized trails. The area occurs within the Montgomery Pass Wild Horse Territory, where habitat restoration activities or horse population management activities may be needed. The polygon has the potential to be reshaped.

Maps

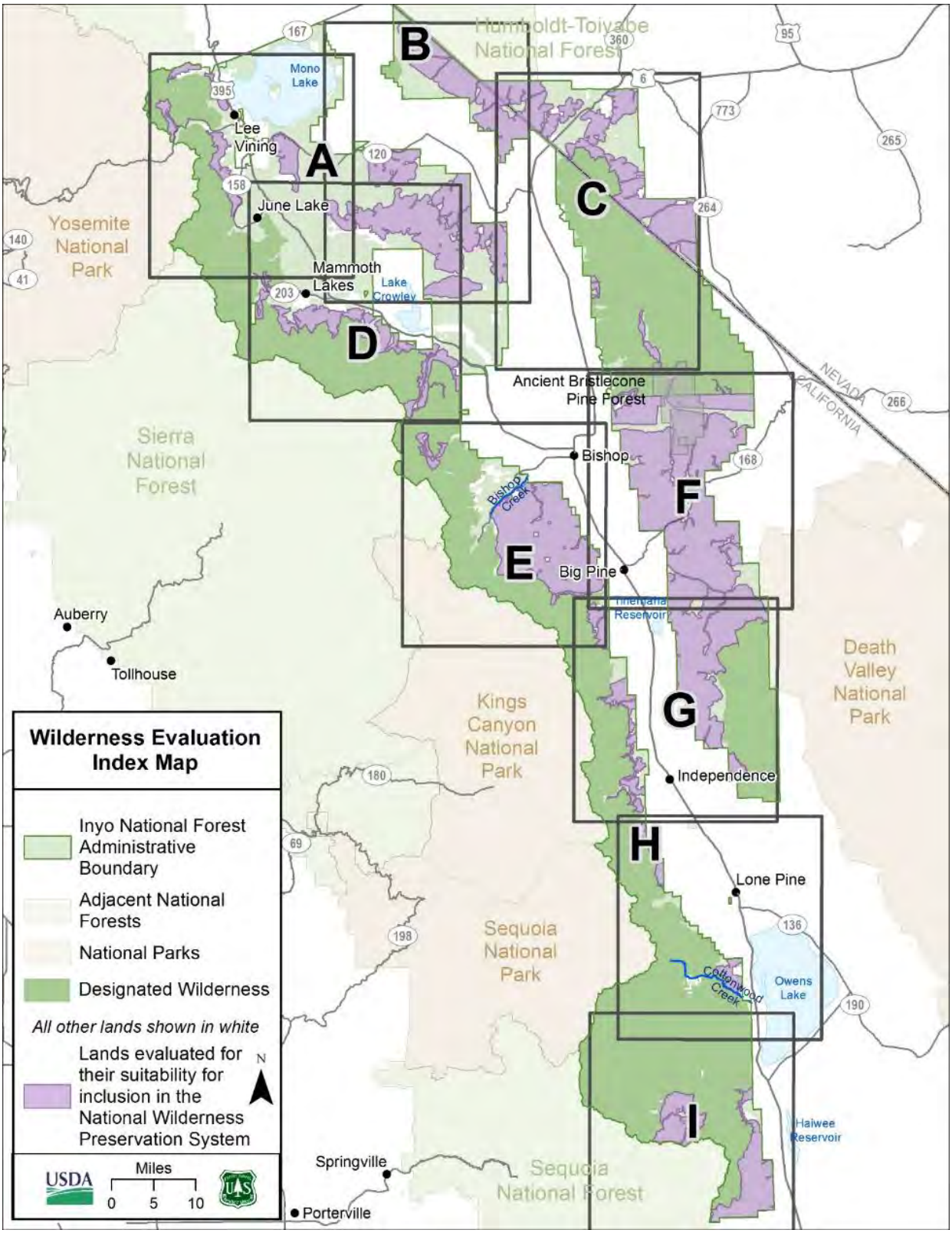


Figure B-2. Map index for Inyo National Forest lands evaluated for their suitability to be recommended for wilderness designation

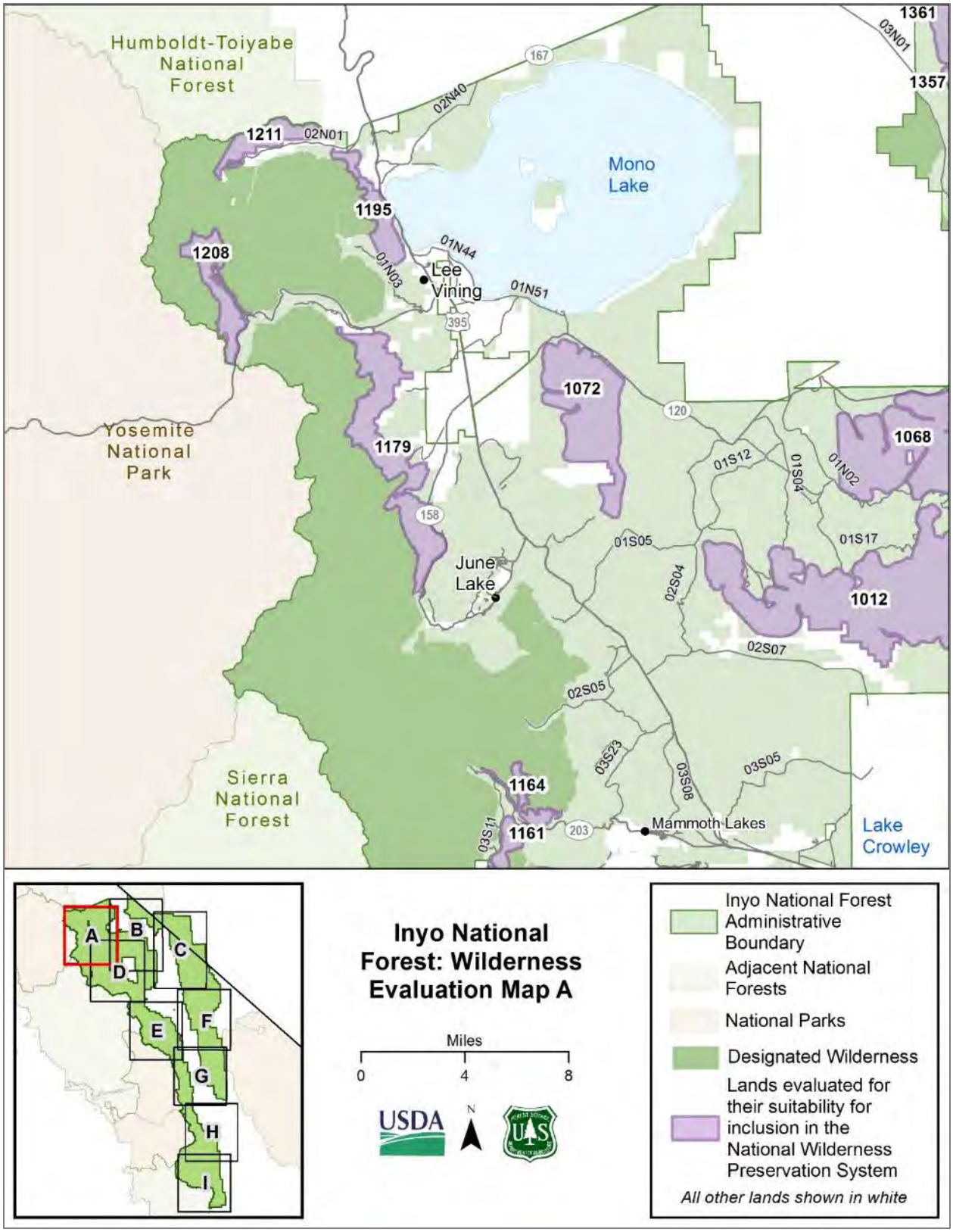


Figure B-3. Inyo National Forest evaluation map A

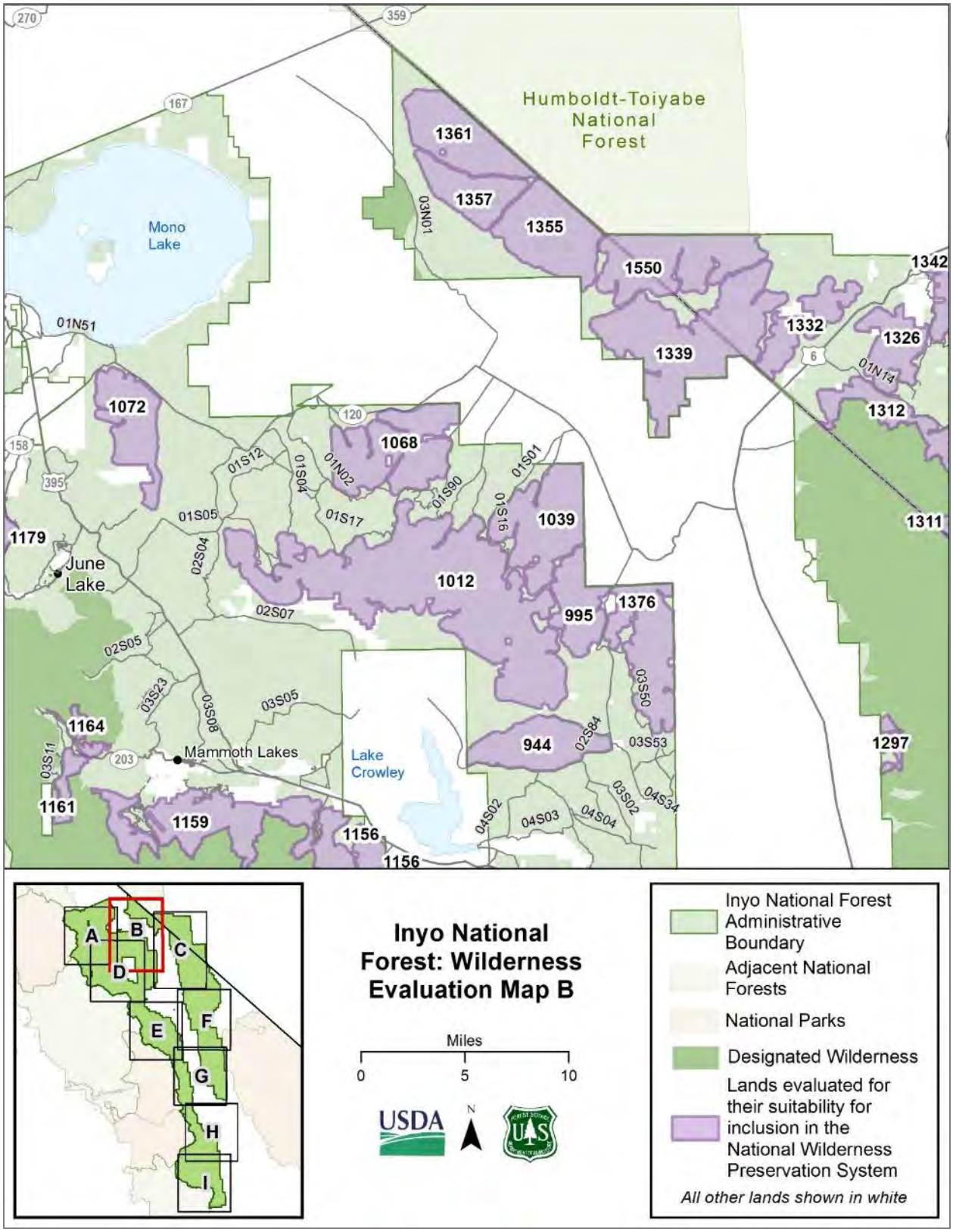


Figure B-4. Inyo National Forest evaluation map B

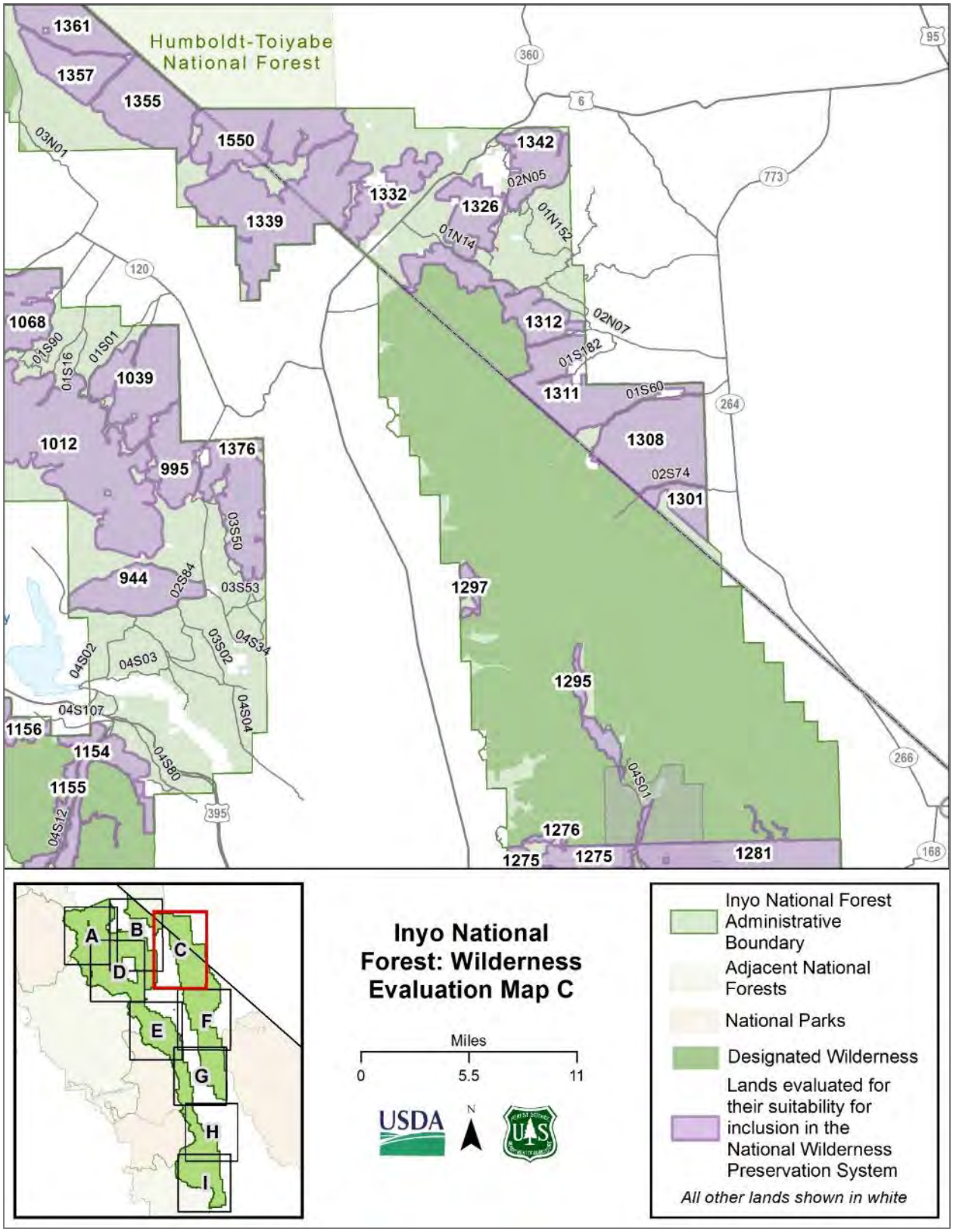


Figure B-5. Inyo National Forest evaluation map C

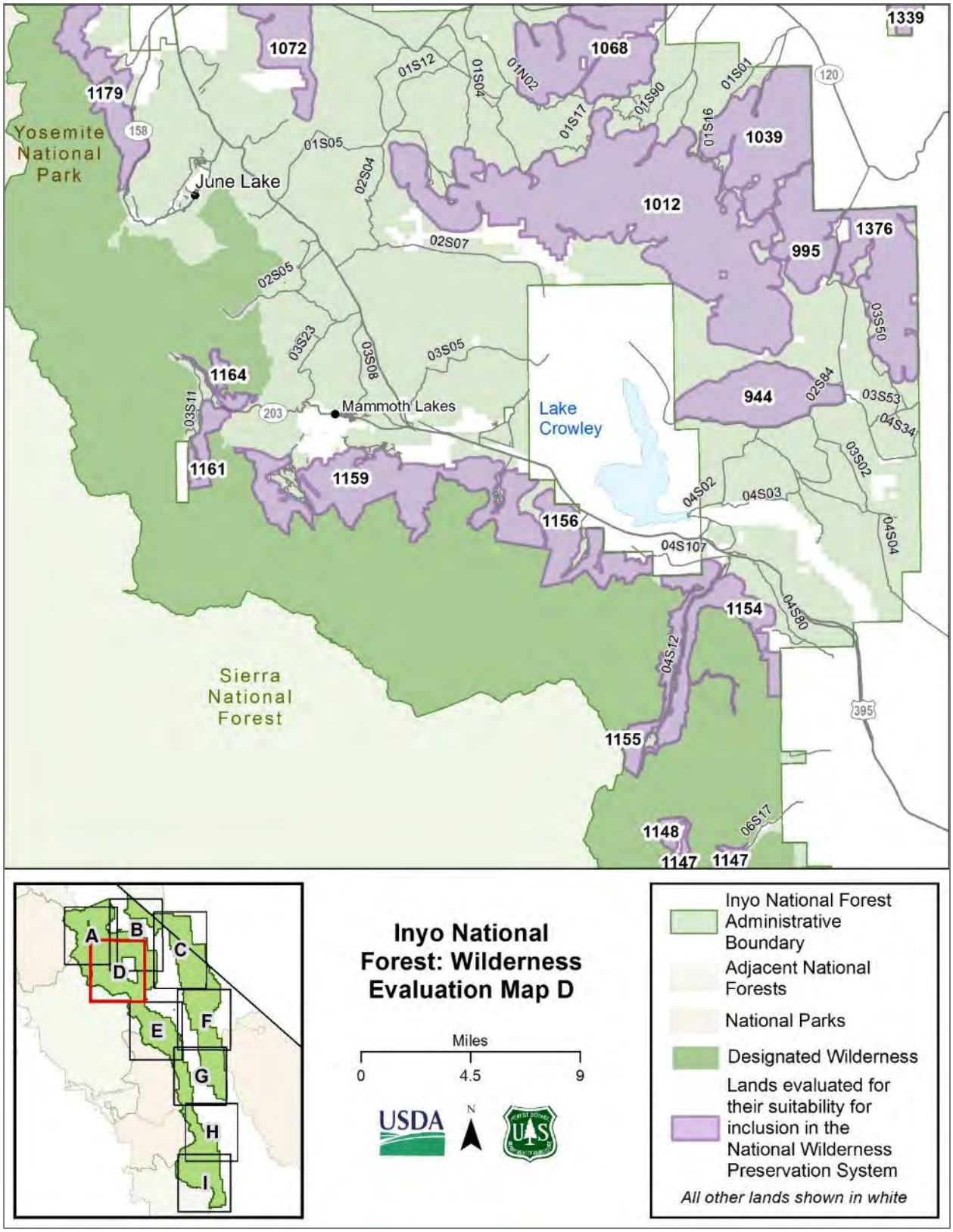


Figure B-6. Inyo National Forest evaluation map D

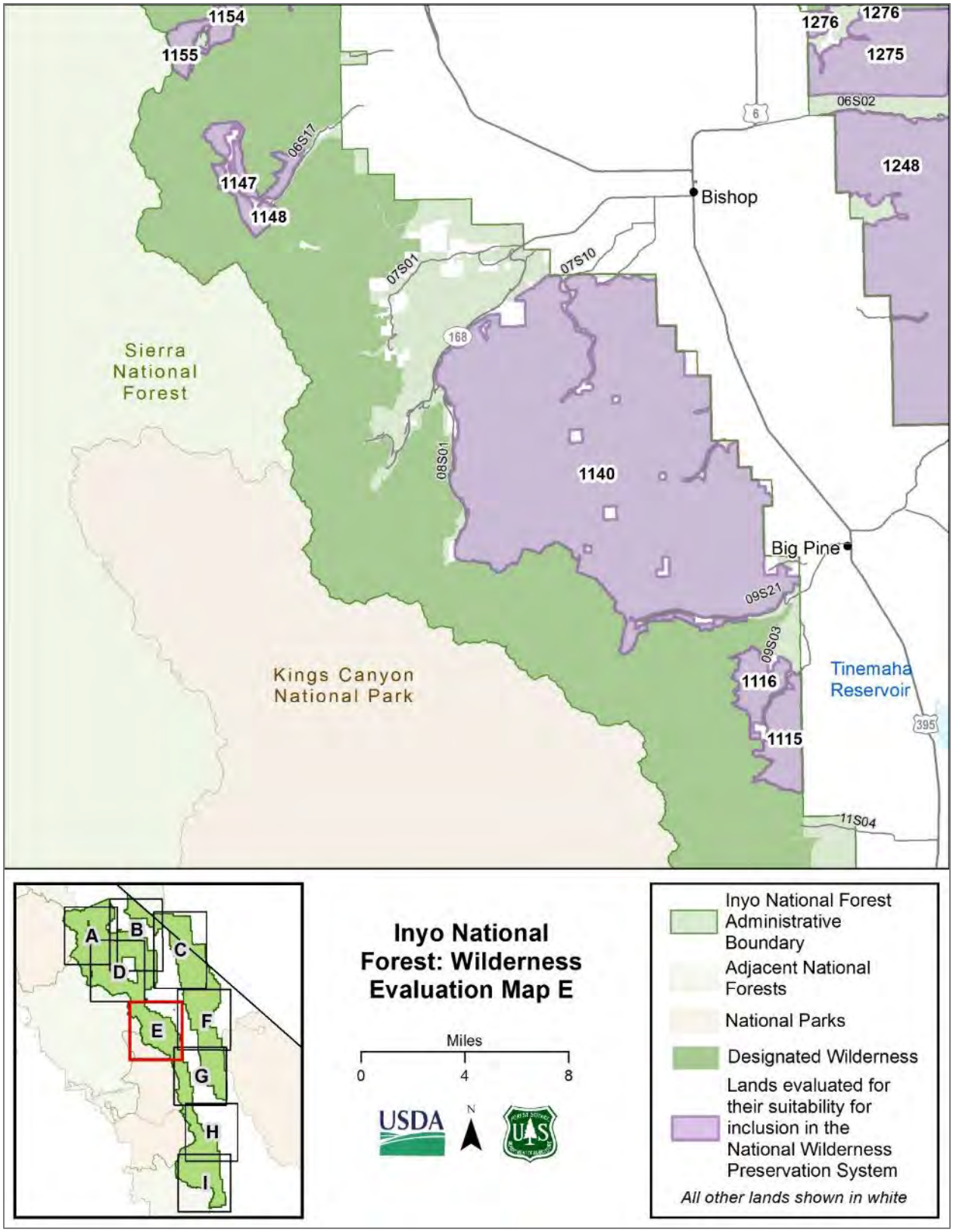


Figure B-7. Inyo National Forest evaluation map E

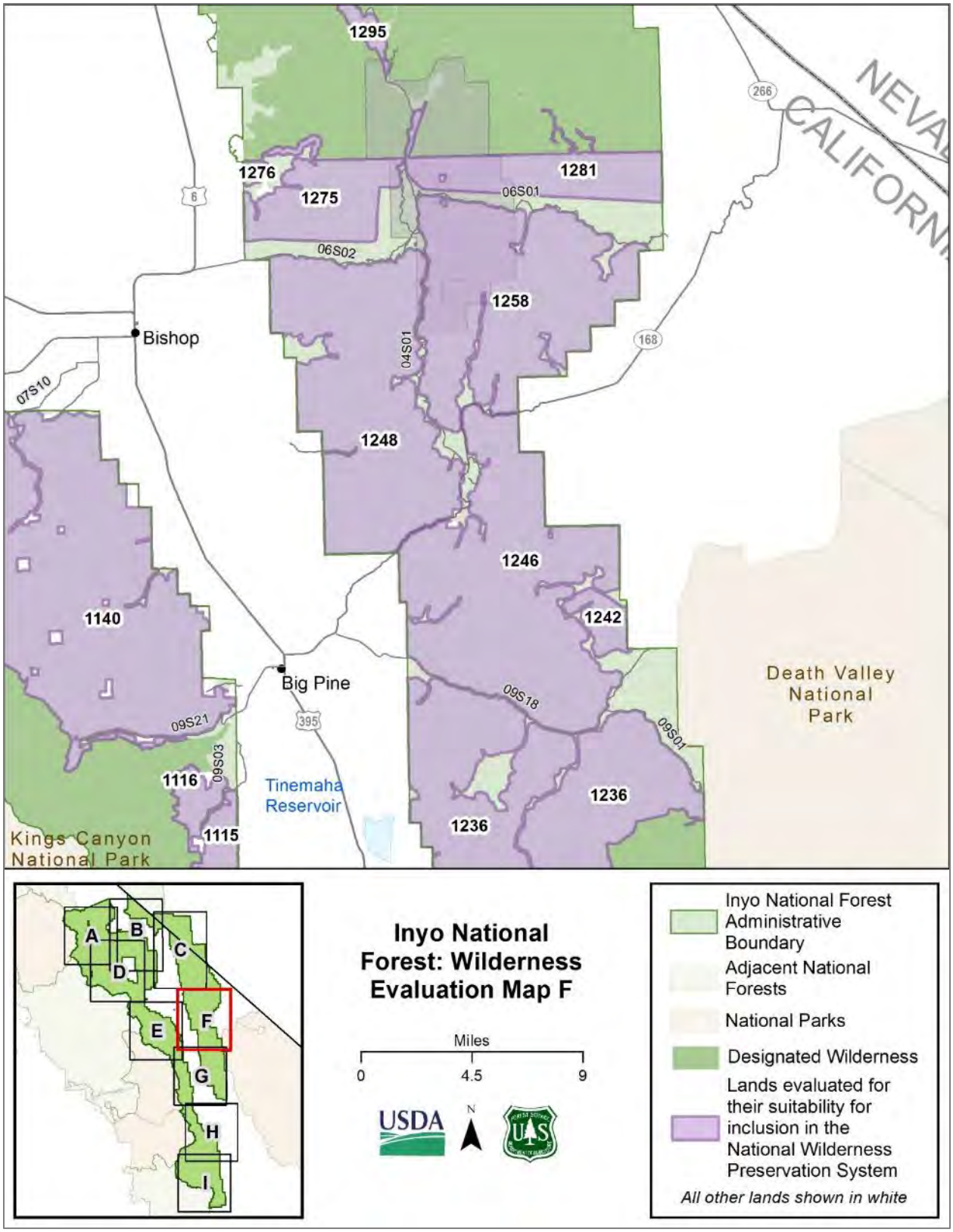


Figure B-8. Inyo National Forest evaluation map F

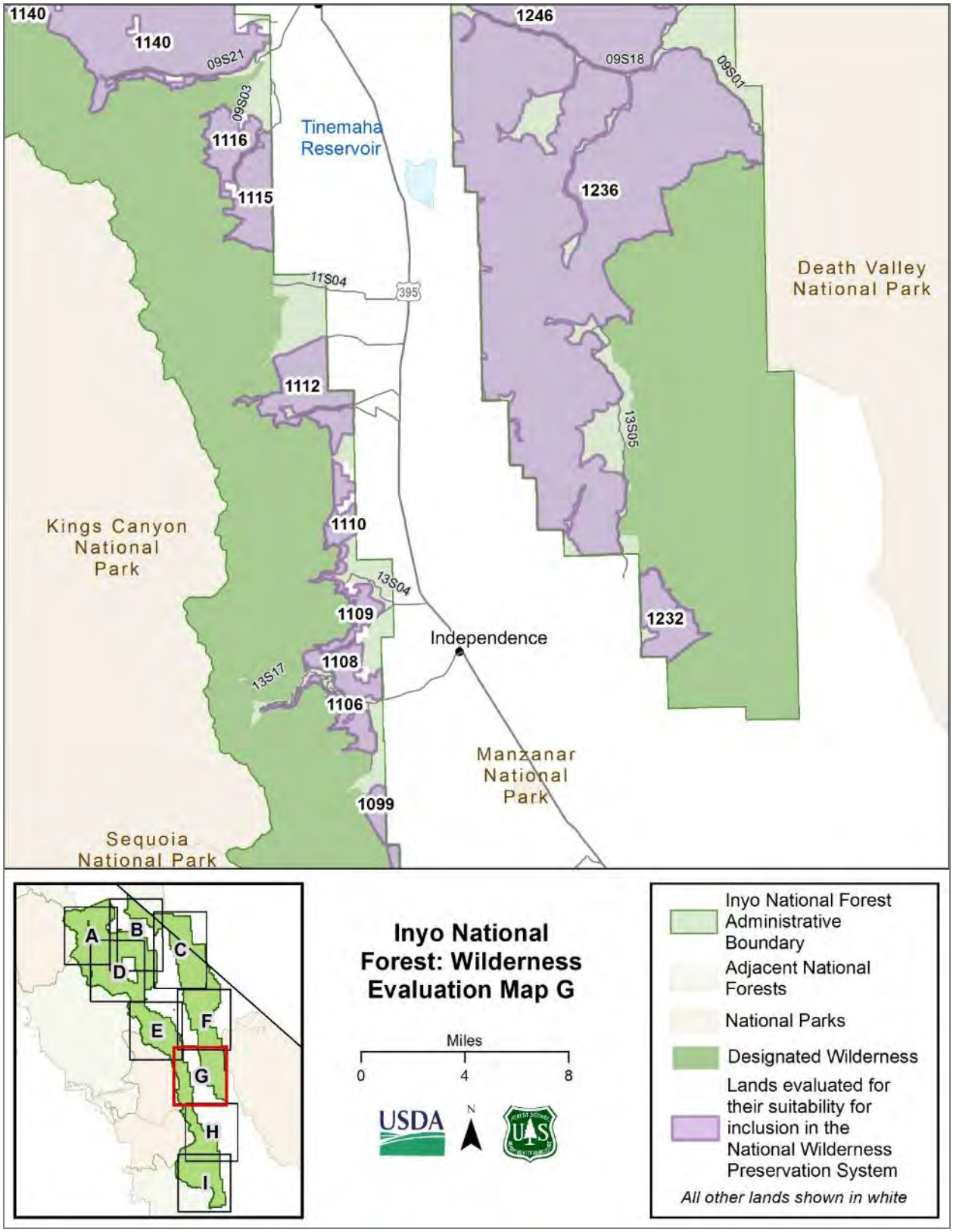


Figure B-9. Inyo National Forest evaluation map G

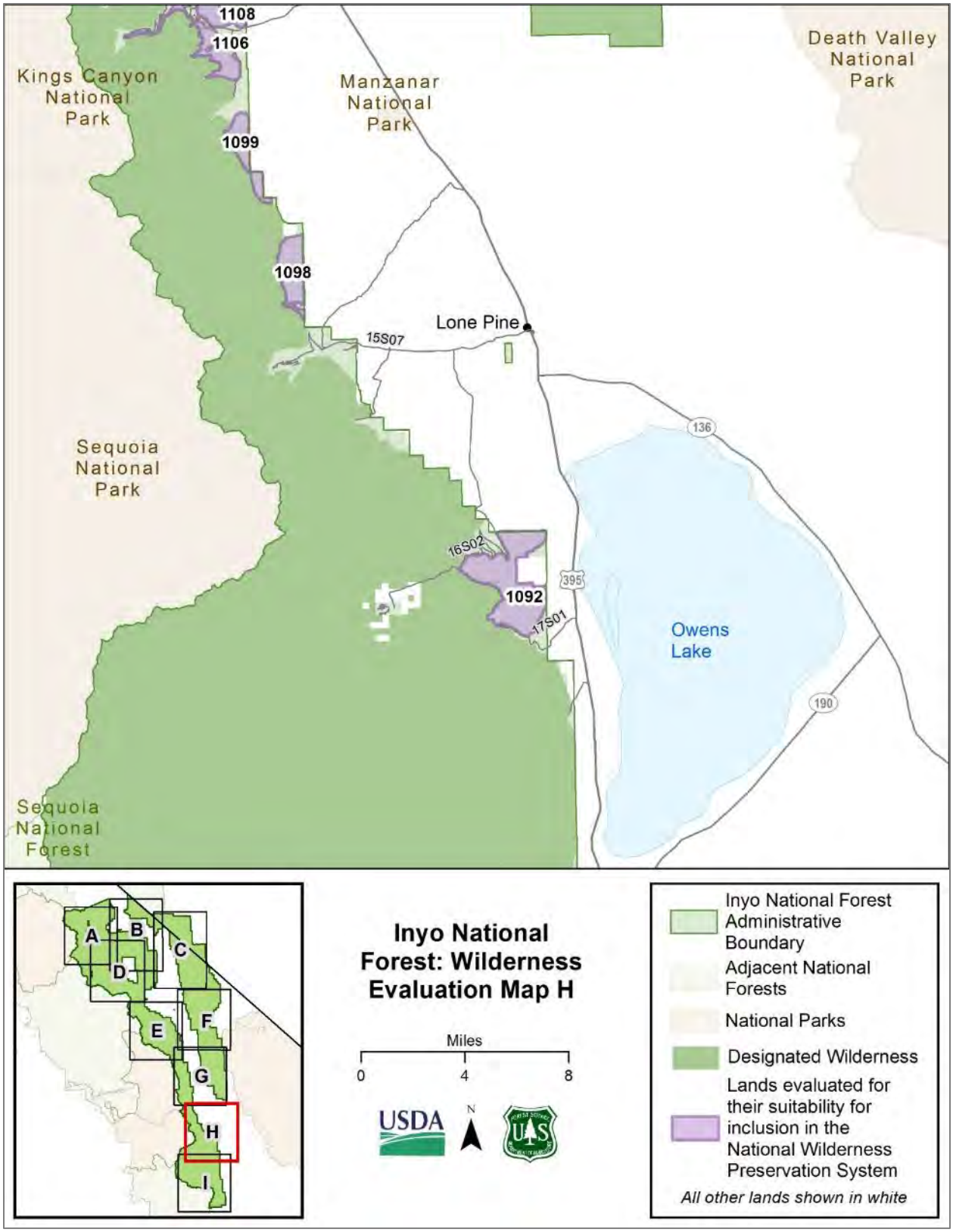


Figure B-10. Inyo National Forest evaluation map H

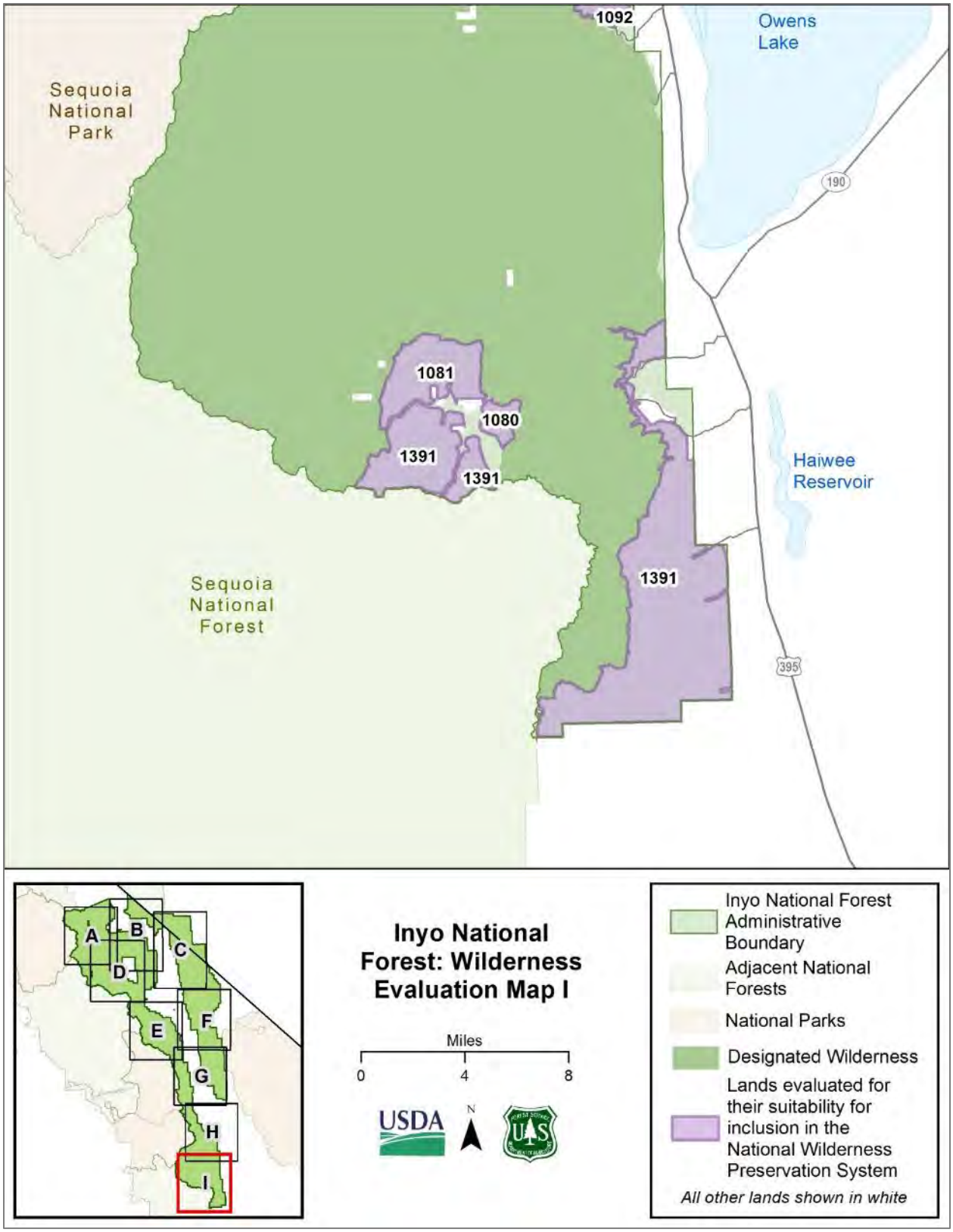


Figure B-11. Inyo National Forest evaluation map I

Analysis

Process for Identifying Areas to Analyze as Recommended Wilderness in the Environmental Impact Statement

Initial Selection of Areas

The draft wilderness evaluation narratives provided the foundation for the initial selection of areas to analyze as recommended wilderness. The Forest Supervisor met with staff to review the draft wilderness evaluation narratives and, as a starting point, identified areas with the highest quality of wilderness characteristics. Next, we considered the extent of development within and adjacent to the polygon, as well as the feasibility of management as wilderness (for example, determining whether there was a need for mechanical vegetation treatments to protect infrastructure and communities from wildfire).

As the quality of wilderness characteristics diminished, we assessed polygons for the presence of infrastructure (such as motorized trails) or established activities that are incompatible with wilderness (such as existing land uses requiring motorized access). These polygons were included if existing uses were of a limited extent. We completed additional reviews to ensure a level of consistency in selecting areas.

During the initial selection of areas, the Forest Supervisor also considered scoping comments received from the public on the final inventory. These comments provided information on wilderness characteristics of inventory areas, as well as provided suggestions and concerns regarding recommended wilderness during this plan revision process.

We mapped the selected areas using criteria from the Wilderness Recommendation Handbook to refine the boundaries. In addition, narrative descriptions were developed for each area that described the following:

- Name of potential recommended wilderness area.
- Number of acres.
- Location and recommended boundary.
- General geography, topography, and vegetation.
- Current uses.
- Wilderness characteristics of the area and the ability to protect and manage the area to preserve those wilderness characteristics.

In May 2015, we posted the maps and narratives of these initially selected areas on the Pacific Southwest Regional planning website:
http://www.fs.usda.gov/detail/r5/landmanagement/planning/?cid=STELPRD3803608

Identification of Additional Areas

Based on public input received from June to November 2015 on the initially selected areas and evaluation process, the Forest Supervisor continued to meet with staff to consider additional areas to bring forward as recommended wilderness under one or more alternatives in the draft environmental impact statement. The Forest Supervisor considered the following factors in selecting areas:

1. **Appearance of naturalness and outstanding opportunities for solitude or primitive and unconfined recreation.**
   The Forest Supervisor considered whether human modifications to the area (such as mining operations or plantations) were substantially noticeable. Polygons where human modifications were substantially noticeable and adversely affected the appearance of naturalness were not brought forward.

   Polygons were also evaluated to determine the degree to which they offered opportunities for solitude or a primitive and unconfined recreation experience. Where external factors adversely affected these opportunities, the Forest Supervisor considered how extensive these effects were within a polygon. Polygons with limited opportunities due to various factors such as the presence or adjacency of motorized roads or trails, groomed snowmobile trails, recreation sites, and infrastructure were typically removed from further consideration.

   Where possible, boundaries were redrawn to exclude activities that adversely affected the appearance of naturalness or opportunities for solitude or a primitive and unconfined recreation experience.

2. **Manageability.**
   The Forest Supervisor considered whether existing management activities and potential future management needs conflicted with preserving the area's wilderness characteristics. This included, but was not limited to, fuels and vegetation management activities needed to protect adjacent high value areas and communities, management of existing special use permits and facilities, and the ability to define polygon boundaries and keep incompatible uses out.

3. **Ecosystem representation.**
   The Forest Supervisor considered whether the area presented an opportunity to protect an ecosystem type that is underrepresented in the National Wilderness Preservation System.

In very few cases was an area selected or not based on one factor alone. Instead, each area was evaluated holistically, while also taking into account the level of public interest in recommending wilderness areas on each forest.

Public Input on Areas Considered for Analysis and Draft Evaluation Narratives

In December 2015, we shared the draft wilderness evaluation narratives, as well as maps and tables displaying areas under consideration for analysis in the draft environmental impact statement as potential recommended wilderness. The narratives summarize the wilderness characteristics of each polygon listed in the final wilderness inventory, as described above in the Evaluation section. The maps and tables displayed areas considered for analysis by alternative, as well as other additional information.

The public was invited to review these materials and provide feedback over a 45-day period on the areas being considered for analysis. We also asked for input regarding suitable uses and management of recommended wilderness. We received and reviewed over 300 submissions from individuals and organizations.

Summary of Public Input

The majority of comments received came from the mountain biking community, who expressed opposition for including any of the additional polygons under consideration for analysis as recommended wilderness.

Public input can generally be categorized into the following topic areas:

1. Concerns regarding the areas being considered for inclusion, including:
    - Concerns that areas were improperly excluded based on what was described in the evaluation narratives (e.g. manageability) or other reasons.
    - Concerns that the Forest Service had not provided rationale or a repeatable process for identifying areas to bring forward.
    - Concerns with the reduction in size of areas being brought forward without adequate explanation.
    - Concerns that not enough inventoried roadless areas were being considered for inclusion.
    - Concerns with roads and road setbacks.
2. Concerns with the alternatives, including:
    - Concerns that the areas being carried forward do not constitute a broad range of alternatives as required by the National Environmental Policy Act.
    - Concerns that there should be additional alternatives that better balance protection of lands with wilderness values and other management needs inconsistent with wilderness values.
    - Concerns that specific areas were not proposed for inclusion in specific alternatives.
3. Concerns with the wilderness evaluation process, including:
    - Concerns with the sequence of the process.
    - Concerns regarding coordination with local governments.
    - Concerns with the inventory process.
4. Concerns with the draft wilderness evaluation narratives, including:
    - Concerns that management trade-offs and manageability of an area as wilderness were improperly considered.
    - Concerns with the level of emphasis placed on the presence of past or current human activities or improvements when evaluating naturalness.
    - Concerns that the criterion requiring an area to have “outstanding opportunities for solitude or a primitive and unconfined type of recreation” was improperly combined.
    - Concerns that when referencing outside sights and sounds as an impediment to the area’s naturalness, we did not adequately describe how pervasive these sights or sounds were.
    - Concerns that when referencing the presence of motorized uses as an impairment to opportunities for solitude, we did not adequately describe how pervasive these uses were and how opportunities for solitude were influenced.
    - Concerns with inconsistencies in the findings and the narratives.

- Concerns with the assumption that plant species and wildlife will do better if in wilderness than on multiple-use lands.
- Concerns that wilderness characteristics of inventoried roadless areas within larger polygons were not adequately addressed. Issues with inconsistencies between evaluation narratives and descriptions of inventoried roadless areas included in existing plans.
- Concerns that important motorized backcountry or alpine OHV trails may have been missed because they are outside of identified destination OHV areas.
- Concerns with bias in the evaluation narratives.

5. Comments providing area-specific information, including:
    - Suggestions for additional areas to include or exclude in the analysis and specific information about why.
    - Details about activities, unique features of value, and existing uses in specific areas.
6. Comments regarding specific activities, including:
    - Concerns that management of recommended wilderness is managed as defacto wilderness areas, where recreation using motorized equipment and mechanized transportation is banned or severely restricted.
    - Types of activities highlighted included motorized recreation, over snow vehicle use, mountain biking, climbing, rockhounding, orienteering, adventure racing, research activities and installations, fire management, wildlife management, historic structures management, and livestock grazing.
7. Issues with maps, including:
    - Requests to include more detailed maps of the areas to better located analysis polygon boundaries and their relationship to roads and trails.
    - Suggestions to update certain analysis polygon names to better match the names of places within them.
    - Suggestions to provide electronic copies of detailed maps that allow the public to zoom in and out.
    - Discrepancies among the data, descriptions, and maps, though no further details were provided.
8. Feedback on suitable uses in recommended wilderness, including:
    - Requests to allow human-powered transport, including bicycles.
    - Requests to prohibit mountain biking and off-road vehicles.
    - Requests to manage landscapes to maintain wilderness characteristics while also allowing for diverse recreation activities and uses through creative and tailored agency management prescriptions and alternative land protection designations.
    - Requests to follow Forest Service directives and provide documentation and rational for continuing to allow uses in recommended wilderness that would not be allowed in designated wilderness, as well as standards to ensure wilderness potential is not reduced.
    - Requests to manage recommended wilderness areas to maintain existing wilderness character and potential.
    - Suggestions for desired conditions for recommended wilderness.

- Allowing up to 10 percent tree harvesting.
- Making sure hunting regulations are the same as surrounding forests.
- Allowing access to wildlife guzzlers for maintenance needs.

Final Identification of Areas to Analyze

We carefully considered public feedback and used the following process to identify the final set of polygons to analyze as recommended wilderness in the draft environmental impact statement:

1. Identify polygons that the public has shown the greatest interest in analyzing as recommended wilderness.
2. Review and refine the wilderness evaluation narratives based on public input.
3. Use a consistent approach to determine which polygons to include in the analysis.

Identify Areas of Greatest Public Interest

The first step was to identify areas of greatest public interest that were not already being considered for inclusion in the analysis. Areas considered to be of greatest public interest included polygons that multiple stakeholders expressed interest in and that also came up several times throughout the process.

Further Refine Evaluation Narratives

The second step was to review the evaluation narratives to address the most critical concerns identified in public comments. Specifically, we reviewed the evaluation narratives to ensure they included appropriate management considerations and accurate descriptions of existing conditions and activities, including the relative influence of these conditions and activities on wilderness characteristics. These concerns were considered to be the most critical because they had the potential to influence consideration of an area for inclusion in the analysis.

In terms of management considerations, we reviewed descriptions in the evaluation narratives that the public expressed concerns about, particularly fire management, livestock grazing, management of threatened and endangered species, invasive species management, and ecological restoration. In terms of the influence of existing conditions and activities on wilderness characteristics, we reviewed the description of naturalness for each polygon to ensure that the assessment of wilderness quality was not solely based on the natural range of variation. We also edited the evaluation narratives where applicable to include a more detailed description of the impacts of motorized uses on opportunities for solitude. Finally, we corrected any factual errors identified by the public.

During this review of evaluation narratives, we reassessed the exclusion of polygons from the analysis based on the refinements made in response to public input. In particular, the focus was on those polygons that the public showed a level of interest in at some point in the process. We found some of these polygons no longer had strong rationale for why they were not moving forward into the analysis.

Determine Which Areas to Include in the Analysis

The Forest Supervisor decided to include additional recommended wilderness areas as part of alternative C in response to public input. Areas of greatest public interest were included as part of alternative C, as well as additional areas discovered while refining the evaluation narratives that did not appear to have strong rationale and were also of some public interest. However, the portions of these polygons that include authorized motorized trails based on recent travel

management decisions were excluded. These motorized portions of the polygons are part of an alternative considered but eliminated from detailed study (see chapter 2). The rationale for all polygons or portions of polygons that were not included in the analysis can be found in the tables below. Some of the areas that were previously considered and shared with the public as recommended wilderness in alternative C were adjusted to include more of the original parent polygon minus the motorized portions. This was done to bring consistency to alternative C polygons and to include as much of the nonmotorized areas the public was interested in analyzing as possible. The Forest Supervisor did not make adjustments to alternatives B, B-modified, or D.

The McBride Flat area was not previously included in the wilderness inventory and evaluation because it was outside the Forest's administrative boundary. Now that the administrative boundary has been formally changed, the inventory and evaluation for this area has been completed. Because the public has not had a chance to weigh in on this area, it was included as recommended wilderness in alternative C.

The following section provides further details on the areas analyzed as recommended wilderness in alternatives B, B-modified, and C of the final environmental impact statement.

Maps and Descriptions of Areas Analyzed

The following map and table provide an overview of all the areas analyzed on the Inyo National Forest that may be suitable for inclusion in the National Wilderness Preservation System. Individual maps are included with each description. A table listing the areas (polygons and portions of polygons) not analyzed, and the rationale, is provided in Table B-3.

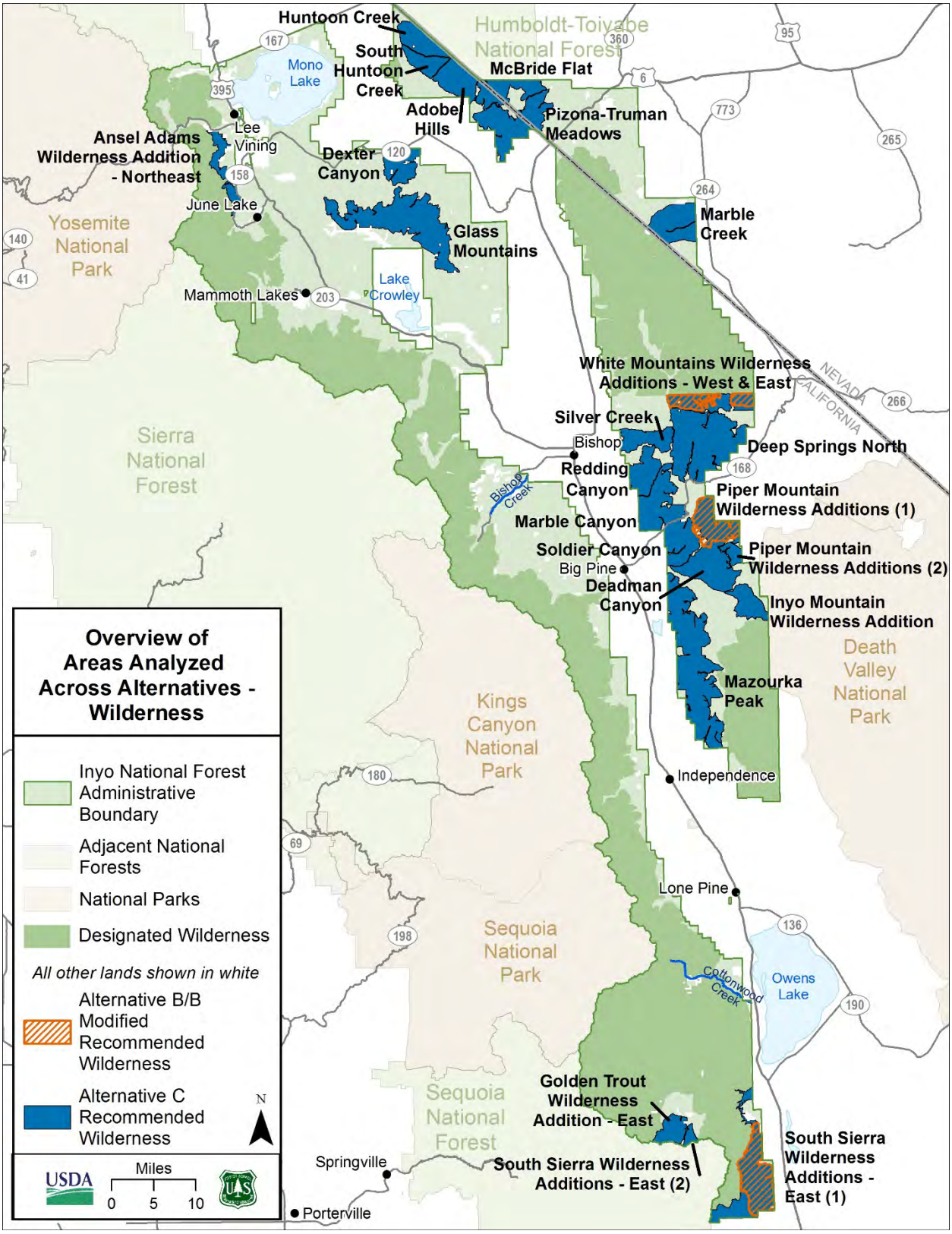


Figure B-12. Overview of Inyo National Forest areas analyzed that may be suitable for inclusion in the National Wilderness Preservation System

Table B-3. Inyo National Forest wilderness evaluation polygons (or portions thereof) analyzed for recommended wilderness in alternatives B and C

Evaluation Polygon Identification Number	Evaluation Polygon Acres	Evaluation Polygon Name	Names (Acres) of Specific Areas Analyzed as Recommended Wilderness in Alternative B	Names (Acres) of Specific Areas Analyzed as Recommended Wilderness in Alternative C
1012	40,368	Glass Mountains	None	Glass Mountains (35,749)
1068	12,311	Dexter Canyon	None	Dexter Canyon (8,740)
1179	7,212	Lower Lee Vining Canyon to June Lake Loop	None	Ansel Adams Wilderness Addition – Northeast (7,046)
1236	73,128	West of Inyo Mountains Wilderness	None	Inyo Mountain Wilderness Addition (7,479) Mazourka Peak (42,927)
1242	2,678	North of Little Cowhorn Valley	None	Piper Mountain Wilderness Additions (2) (2,726)
1246	43,231	North of Eureka Valley Road	Piper Mountain Wilderness Additions (1)[A] (11,840)	Deadman Canyon[2] (15,910) Piper Mountain Wilderness Additions (1) (11,313) Soldier Canyon (11,024)
1248	38,756	Redding Canyon, Black Canyon	None	Marble Canyon (15,867) Redding Canyon (8,906) Silver Creek (8,635)
1258	35,248	Ancient Bristlecone Pine Forest and Wyman Canyon South	None	Deep Springs North (34,716)
1281	11,210	Ancient Bristlecone Pine Forest and Dead Horse Meadow	White Mountains Wilderness Additions (East) (2,505) White Mountains Wilderness Additions (West) (5,062)	White Mountains Wilderness Additions (East) (3,288) White Mountains Wilderness Additions (West) (8,630)
1308	13,886	Indian Creek to Leidy Creek	None	Marble Creek (13,707)
1339	19,826	Pizona-Truman Meadows	None	Pizona-Truman Meadows (19,957)
1355	10,297	Excelsior Mountains-Adobe Hills	None	Adobe Hills (10,354)
1357	5,805	Excelsior Mountains	None	South Huntoon Creek (5,898)
1361	8,855	Excelsior Mountains - Huntoon Creek	None	Huntoon Creek (8,876)
1391[B]	33,247	Monache, Blackrock and South Sierra East	South Sierra Wilderness Additions – East (1) (17,622)	Golden Trout Wilderness Addition – East (6,008) South Sierra Wilderness Additions – East (1) (25,469) South Sierra Wilderness Additions – East (2) (1,514)
1550[C]	12,198	McBride Flat[1]	None	McBride Flat (10,621)

A. In previously publicly shared information of areas being considered for inclusion in one or more alternatives as potential recommended wilderness, this area was call “Deep Springs South.” It is been renamed “Piper Mountain Wilderness Additions (1).”

B. Evaluation Polygon 1391 overlays the boundary between the Inyo and Sequoia National Forests, with portions in each forest. The figures here represent just the acres occurring on the Inyo National Forest.

C. In previously publicly shared information of areas being considered for inclusion in one or more alternatives as potential recommended wilderness, this area was call “Soldier Canyon” It is been renamed “Deadman Canyon.”

1. McBride Flat is a polygon that was not included in the final inventory; the polygon was subsequently added due to an administrative boundary change that brought the area under the management of the Inyo National Forest.

Adobe Hills

This recommendation was derived from Wilderness Evaluation Polygon 1355.

Number of Acres

The area is approximately 10,354 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Adobe Hills map (Figure B-13).

The boundary follows the California-Nevada state line, National Forest System roads, and the forest administrative boundary, making it fairly easy to locate on the map and on the ground. Most of the adjacent land is managed by either the Forest Service or the Bureau of Land Management. The northern boundary following forest road 03N11 and connects to road 02N109 to form the western and southern boundary. The remaining southern boundary follows the National Forest administrative boundary and then connects to forest road 01N113 to form the eastern boundary. The remainder of the eastern boundary follows the National Forest administrative boundary which is the California-Nevada state line.

General Geography, Topography and Vegetation

This area is located in the Excelsior Mountains, north of Adobe Lake, within the Adobe Hills with elevations ranging from 7,200 to 7,600 feet. Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands and blackbrush. The topography consists of low rolling hills mostly comprised of pinyon woodland and shrublands.

Current Uses

Currently, the area has low recreation use due to remoteness of the area and limited water. The majority of the polygon is managed as inventoried roadless area. The southeastern portion of the area occurs within the Montgomery Wild Horse Management Area; potential management activities include fencing, corrals, and helicopter use.

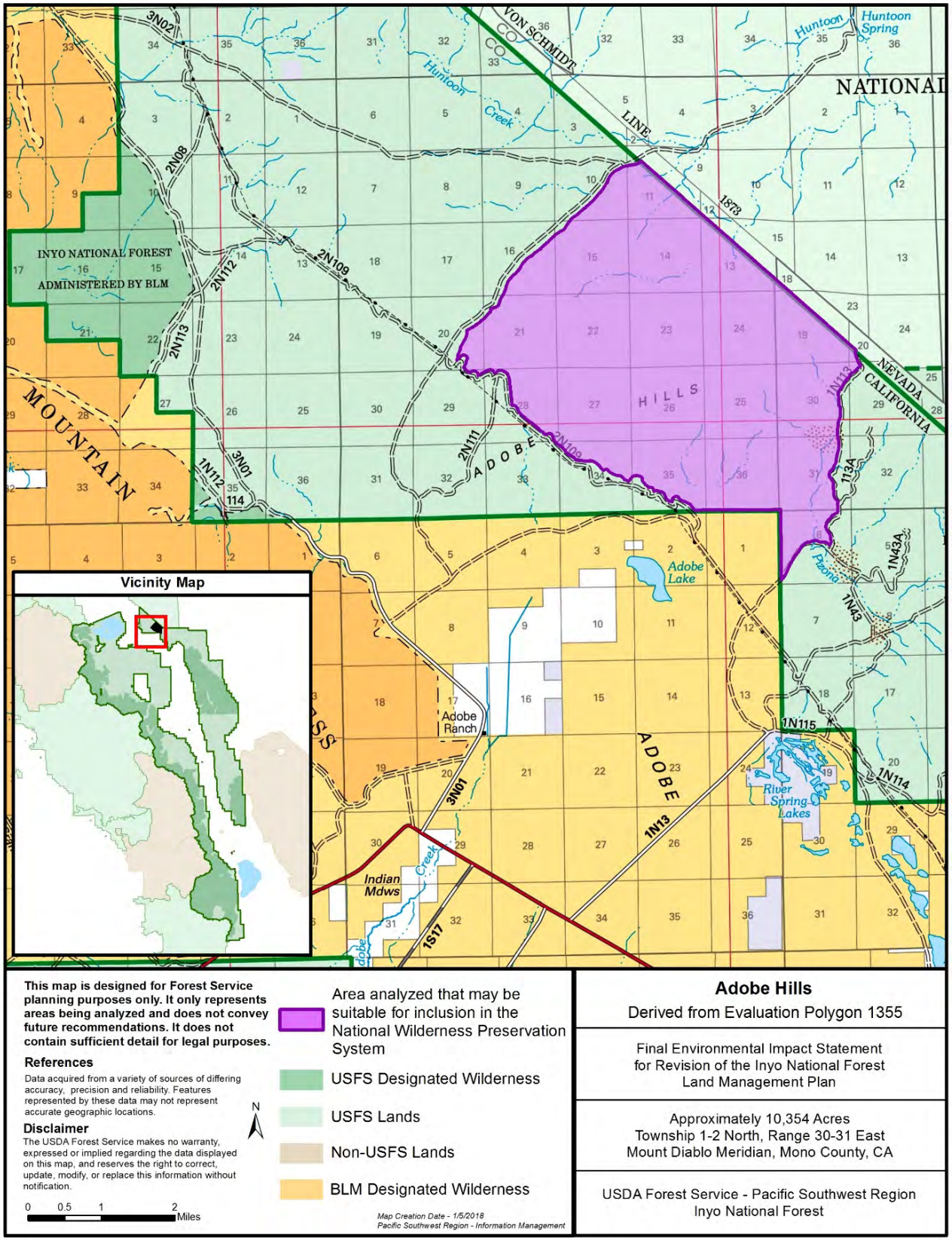
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

The area has few alterations to natural conditions. Lightly traveled roads and transmission lines are visible from the polygon, and managing the polygon to preserve its wilderness characteristics would be affected by overlap with the Montgomery Wild Horse Management Area, which may require management activities for wild horses that may be inconsistent with wilderness. The area is remote and has good opportunities for solitude and primitive and unconfined recreation. Recreation opportunities may be limited by the lack of available water.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Good opportunities for solitude and primitive and unconfined recreation.


Vicinity Map
INYO NATIONAL FOREST
ADMINISTERED BY BLM
MOUNTAIN
HILLS
ADOBE
Adobe Lake
Adobe Ranch
Indian Mdws
River Spring Lakes
Huntoon Spring
Huntoon Creek
VON SCHMIDT LINE
NEVADA
CALIFORNIA
NATIONAL
3N02
2N08
2N112
2N109
2N113
2N111
3N01
1N112
114
1N13
1N115
1N114
1N43
1N43A
1S17
This map is designed for Forest Service planning purposes only. It only represents areas being analyzed and does not convey future recommendations. It does not contain sufficient detail for legal purposes.
References
Data acquired from a variety of sources of differing accuracy, precision and reliability. Features represented by these data may not represent accurate geographic locations.
Disclaimer
The USDA Forest Service makes no warranty, expressed or implied regarding the data displayed on this map, and reserves the right to correct, update, modify, or replace this information without notification.
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N
Area analyzed that may be suitable for inclusion in the National Wilderness Preservation System
USFS Designated Wilderness
USFS Lands
Non-USFS Lands
BLM Designated Wilderness
Map Creation Date - 1/5/2018
Pacific Southwest Region - Information Management
Adobe Hills
Derived from Evaluation Polygon 1355
Final Environmental Impact Statement for Revision of the Inyo National Forest Land Management Plan
Approximately 10,354 Acres
Township 1-2 North, Range 30-31 East
Mount Diablo Meridian, Mono County, CA
USDA Forest Service - Pacific Southwest Region
Inyo National Forest

Figure B-13. Map of Adobe Hills area analyzed as recommended wilderness in alternative C

Ansel Adams Wilderness Addition – Northeast

This recommendation was derived from Wilderness Evaluation Polygon 1179.

Number of Acres

The area is approximately 7,046 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Ansel Adams Wilderness Addition – Northeast map (Figure B-14). The boundary is contiguous with the Ansel Adams Wilderness along the western boundary. However, the polygon is elongated vertically from north to south and roads and private land parcels protrude into the polygon along the eastern edge, making for an irregularly shaped boundary. Some of the eastern boundary follows roads and is more easily identifiable. The Los Angeles Department of Water and Power manages lands adjacent to the boundary. The wilderness boundary excludes existing California State Highway System rights-of-ways due to the 200 foot setback from authorized roads and highways used when determining the wilderness boundaries.

General Geography, Topography and Vegetation

The area is located along the Sierra Nevada escarpment from Lower Lee Vining Canyon to Silver Lake and ranges in elevation from 7,600 to 9,000 feet. Ecosystem types include Jeffrey pine, mountain mahogany, pinyon-juniper, red fir, sagebrush, subalpine forest and white fir. It includes highly diverse conifer forests and aspen. The topography is steep, with many streams or drainages. There are numerous perennial stream channels, such as Walker Creek, Gibbs Creek and Parker Creek.

Current Uses

The area has current and historic fish stocking, as well as fish barriers to keep trout out of frog habitat. Understory thinning projects to reduce fuels are being implemented. The area includes habitat improvement for Sierra Nevada bighorn sheep and sage grouse. The area is designated critical habitat for Sierra Nevada bighorn sheep. There are aspen enhancement projects within the area. Walker Lake Dam is in the area. There are some Los Angeles Department of Water and Power structures. There are trailheads in the area. There is existing outfitting and guiding in the area, including a pack station. Motorized winter recreation is an existing use within portions of the polygon. The north half of the area is managed as an inventoried roadless area. There are five water rights in the area.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

There has been minimal human impact to the plant community. The area is very diverse, with low invasive plant species. Historic and current fish stocking have altered aquatic assemblages. Fish barriers that need to be mechanically maintained are necessary to prevent introduced trout from invading habitat for a federally listed frog species in upper reaches. This area contains designated critical habitat for Sierra Nevada bighorn sheep, which may require management activities.

The area is in proximity to concentrated recreation use and facilities, and highways in the south and north portions of the area. As a result, there is a need for wildfire defensible space around developments and access roads. The proximity to concentrated recreation use and highways limits the opportunity for solitude. Screening is minimal in some areas, but the topography along the western side of the polygon offers good screening. There are opportunities for primitive and unconfined recreation, including cross-country hiking and general forest exploration.

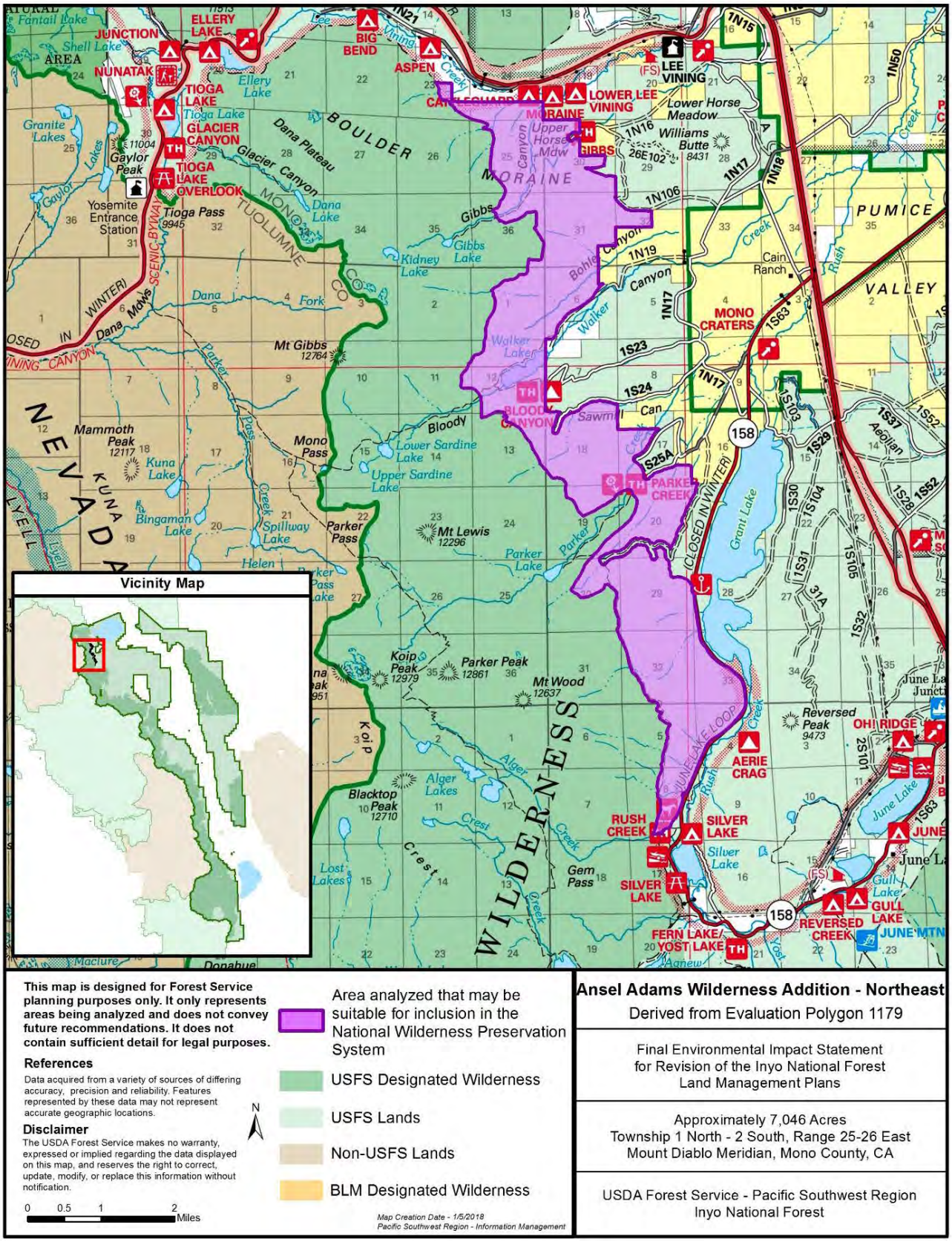


Figure B-14. Map of Ansel Adams Wilderness Addition – Northeast area analyzed as recommended wilderness in alternative C

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Opportunities for primitive and unconfined recreation.

Deadman Canyon

This recommendation was derived from Wilderness Evaluation Polygon 1246.

Number of Acres

The area is approximately 15,910 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Deadman Canyon map (Figure B-15). The boundary follows National Forest System roads and motorized trails, making it fairly easy to locate on the map and on the ground. The areas surrounding the polygon are managed by the Forest Service.

General Geography, Topography and Vegetation

This area is located between the White Mountains and Inyo Mountains, north of Eureka Valley Road and south of the boundary between the White Mountain and Mt. Whitney Ranger Districts. Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands and blackbrush. The topography includes steep to gentle slopes. Elevation ranges from 5,000 to 8,600 feet.

Current Uses

The majority of the polygon is managed as inventoried roadless area. There are a large number of cultural resource sites. The area includes one water right. There are general tribal concerns regarding tribal access and use.

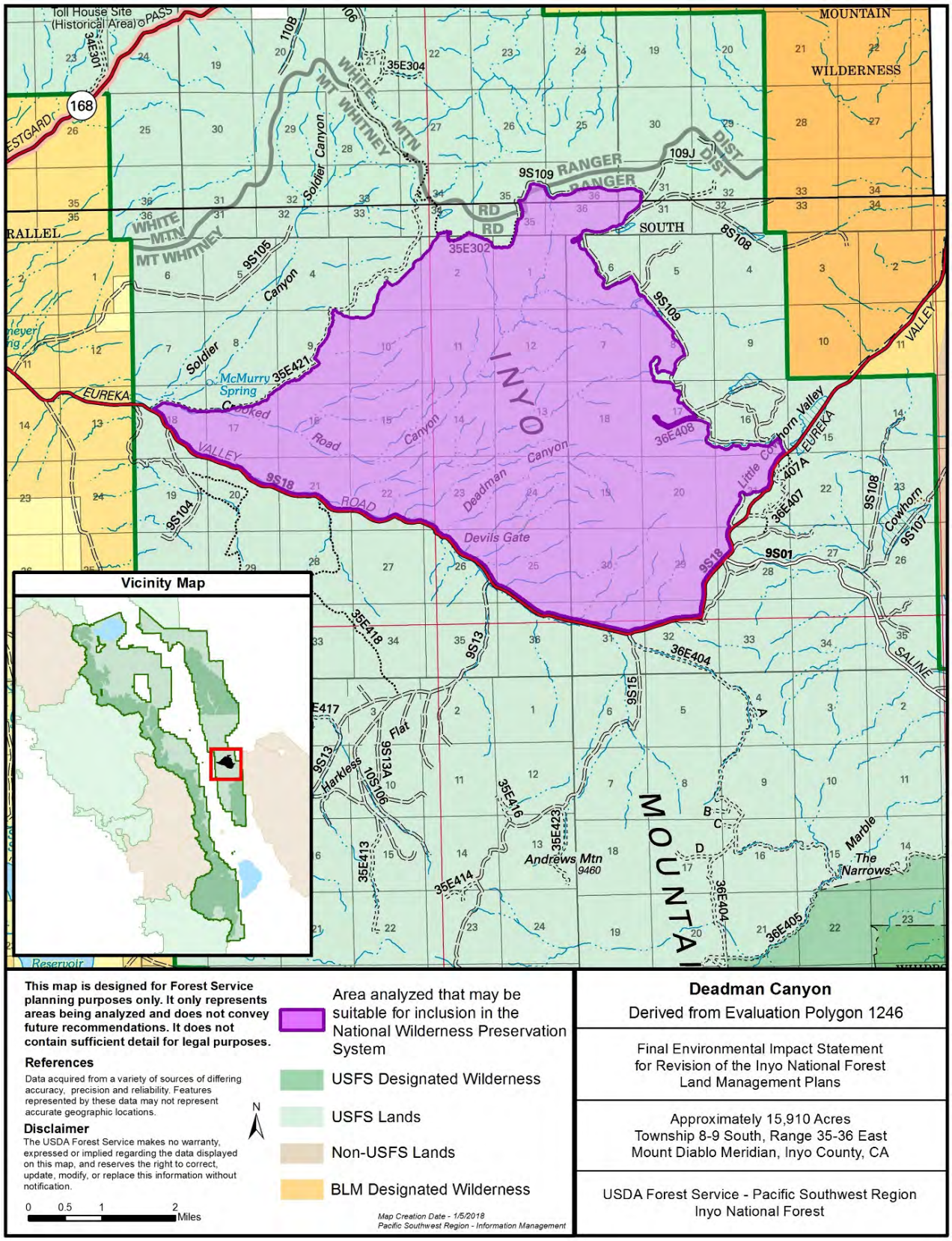
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Some historic clearing/harvesting for mining is evident. The opportunity for solitude is limited due to the proximity to motorized recreation. There are opportunities for primitive and unconfined recreation. The pinyon-juniper woodlands and subalpine areas offer primitive recreation opportunities typical of the Great Basin: hiking, horseback riding and deer hunting.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Opportunities for primitive and unconfined recreation.
- Opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System.


Vicinity Map
INYO
MOUNTAIN
WILDERNESS
SOUTH
Deadman Canyon
Devils Gate
Andrews Mtn
9460
Soldier Canyon
McMurry Spring
Crooked Canyon Road
Little Cowhorn Valley
Cowhorn Valley
Marble
The Narrows
Flat
Harkless
Reservoir
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0 0.5 1 2 Miles
N
Area analyzed that may be suitable for inclusion in the National Wilderness Preservation System
USFS Designated Wilderness
USFS Lands
Non-USFS Lands
BLM Designated Wilderness
Map Creation Date - 1/5/2018
Pacific Southwest Region - Information Management
Deadman Canyon
Derived from Evaluation Polygon 1246
Final Environmental Impact Statement for Revision of the Inyo National Forest Land Management Plans
Approximately 15,910 Acres
Township 8-9 South, Range 35-36 East
Mount Diablo Meridian, Inyo County, CA
USDA Forest Service - Pacific Southwest Region
Inyo National Forest

Figure B-15. Map of Deadman Canyon area analyzed as recommended wilderness in alternative C

Deep Springs North

This recommendation was derived from Wilderness Evaluation Polygon 1258.

Number of Acres

The area is approximately 34,716 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Deep Springs North map (Figure B-16). The boundary follows National Forest System roads, a county road, natural features and the forest administrative boundary, making it fairly easy to locate on the map and on the ground. Most of the adjacent land is managed by either the Forest Service or the Bureau of Land Management. The boundary excludes all motorized trails in the southern portion of the original parent polygon, supporting management of the area for wilderness, as well as other adjacent uses.

General Geography, Topography and Vegetation

This area is located at the southern end of the White Mountains and is an area that exhibits complex geological processes. Elevations range from over 9,000 feet along Robert's Ridge along the northern boundary to 5,000 feet along alluvial fans along the eastern boundary. A central feature in the area is the Birch Creek granite batholith, which is emplaced amidst the parent sedimentary rocks of the White Mountains. The Birch Creek drainage comprises the majority of the area. Portions of the creek have perennial flows, and the creek is noted for its travertine formations and the canyon it has formed through the granite batholith. Ecosystem types include mountain mahogany, pinyon-juniper, sagebrush and subalpine forest.

Current Uses

The area receives low amounts of recreation use, which includes backpacking, hiking and hunting. There is a use trail (not a forest system trail) in the Birch Creek drainage. The northwest portion of the area is within the Ancient Bristlecone Pine Forest, and includes the Discovery National Recreation Trail, Bristlecone Pine Visitor Center, and associated trails in the Shulman Grove area. Visitor use to this specific area is high. Livestock grazing occurs with no range improvements associated with the allotments. Some of the area is managed as inventoried roadless area. There are several documented cultural properties.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

The area includes the Birch Creek granite batholith geologic feature, which has scenic and scientific values, and several rare plants. The area provides good opportunities for solitude and primitive and unconfined recreation, outside of the Schulman Grove and Bristlecone Pine Visitor Center. The area is distant from occupied and modified areas. The steep ridges and deep drainages support a remote experience away from the sights and sounds of people inside the wilderness. The sense of remoteness may be diminished along the area's periphery by motorized vehicle use on forest system roads. There are unauthorized routes in the area, which are expected to return to natural conditions through passive restoration processes.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Good opportunities for solitude and primitive and unconfined recreation.
- The area represents a good opportunity to add underrepresented ecosystems to the National Wilderness Preservation System.

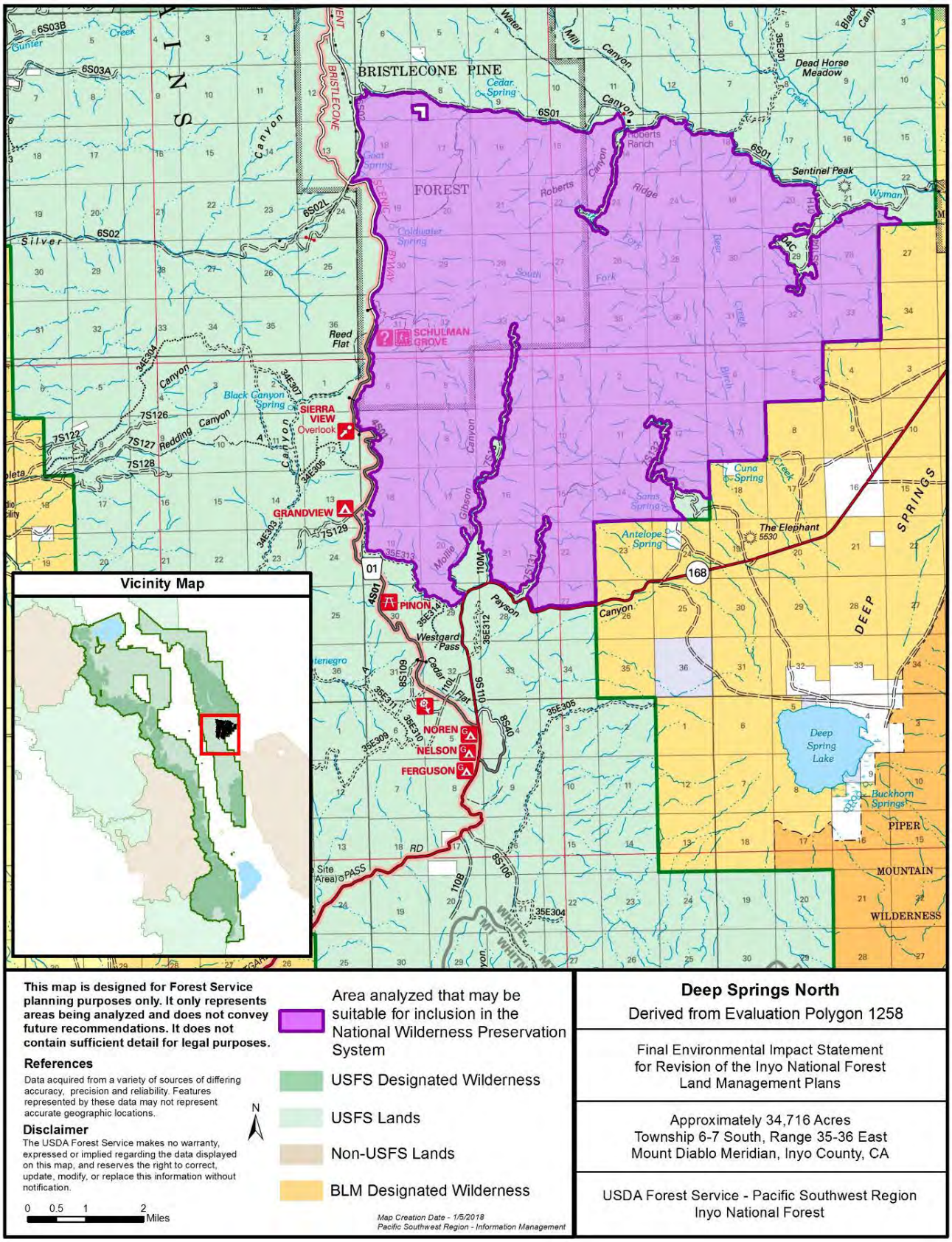


Figure B-16. Map of Deep Springs North area analyzed as recommended wilderness in alternative C

Dexter Canyon

This recommendation was derived from Wilderness Evaluation Polygon 1068.

Number of Acres

The area is approximately 8,740 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Dexter Canyon map (Figure B-17). The boundary follows the forest administrative boundary, roads, and private land boundaries, making it fairly easy to locate on the map and on the ground. Most of the adjacent land is managed by either the Forest Service or the Bureau of Land Management, with some private land inholdings northwest of Dexter Canyon. Private land parcels and roads protrude into the area making the polygon oddly shaped. The boundary excludes motorized trails in the western portion of the original parent polygon, supporting management of the area for wilderness, as well as other adjacent uses. The wilderness boundary excludes existing California State Highway System rights-of-ways due to the 200 foot setback from authorized roads and highways used when determining the wilderness boundaries. The northern boundary follows Highway 120 East, excluding forest road 01S15B when moving to the western boundary. It then follows forest road 01S15A and connects to a topographic line at the southern boundary, connecting, and excluding, forest road 01S170. It then follows forest road 01S17 for the remainder of the southern boundary and eastern boundary where it connects to the boundary with private lands.

General Geography, Topography and Vegetation

This area is located south of Highway 120 and east of Sagehen Peak and includes Dexter Canyon. Ecosystem types include Jeffrey pine, pinyon-juniper, and sagebrush. It is a priority habitat for sage-grouse. There are numerous perennial channels such as Dexter, Wet, and North Canyons. Intermittent channels also are present. Elevation ranges from 7,200 to 8,800 feet.

Current Uses

Some of the polygon is managed as inventoried roadless area. A portion of the polygon is within an active sheep grazing allotment, which includes water troughs and a large water tank. There are several documented cultural resources. The area receives low to medium amount of use. This area is a priority habitat for sage-grouse.

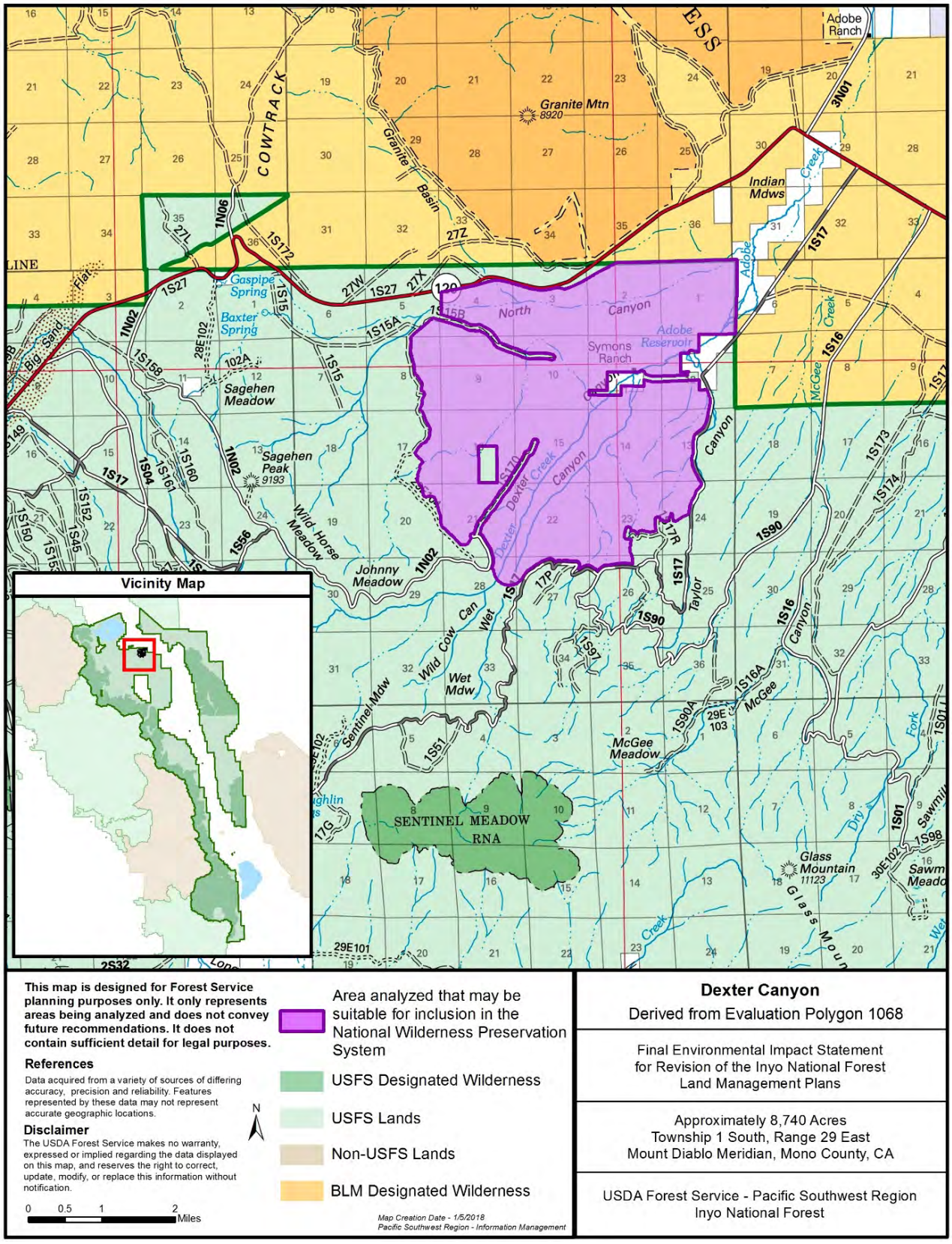
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

There has been some pinyon pine expansion in some areas that indicates a departure from natural fire regime. Native fish and fishless areas were stocked with non-native trout species, which has affected aquatic ecologic integrity. The area contains priority habitat for sage-grouse, which may require management activities that are inconsistent with wilderness. Proximity to motorized recreation, private land parcels and Highway 120, limit opportunities for solitude. Grazing activities could also limit the opportunity for solitude. Shepherds drive sheep from place to place and set up camps where they stay overnight. There are opportunities for primitive and unconfined recreation, including cross-country hiking, hunting, and general forest exploration.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Some opportunities for primitive and unconfined recreation.


Vicinity Map
SENTINEL MEADOW RNA
Granite Mtn 8920
Glass Mountain 11123
Sagehen Peak 9193
Adobe Ranch
Indian Mdws
Gaspipe Spring
Baxter Spring
Sagehen Meadow
Johnny Meadow
Wild Horse Meadow
Wet Mdw
McGee Meadow
Symons Ranch
Adobe Reservoir
North Canyon
Dexter Canyon
Taylor Canyon
McGee Canyon
Big Sand Flat
COWTRACK
Granite Basin
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Area analyzed that may be suitable for inclusion in the National Wilderness Preservation System
USFS Designated Wilderness
USFS Lands
Non-USFS Lands
BLM Designated Wilderness
Map Creation Date - 1/5/2018
Pacific Southwest Region - Information Management
Dexter Canyon
Derived from Evaluation Polygon 1068
Final Environmental Impact Statement for Revision of the Inyo National Forest Land Management Plans
Approximately 8,740 Acres
Township 1 South, Range 29 East
Mount Diablo Meridian, Mono County, CA
USDA Forest Service - Pacific Southwest Region
Inyo National Forest

Figure B-17. Map of Dexter Canyon area analyzed as recommended wilderness in alternative C

Glass Mountains

This recommendation was derived from Wilderness Evaluation Polygon 1012.

Number of Acres

The area is approximately 35,749 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Glass Mountains map (Figure B-18). The boundary follows National Forest System roads and motorized trails and private land boundaries, making it fairly easy to locate on the map and on the ground, though it is oddly shaped due to these features. Most of the adjacent land is managed by either the Forest Service with some private land inholdings. The boundary excludes motorized trails along the eastern and southwestern portions of the original parent polygon, supporting management of the area for wilderness, as well as other adjacent uses.

General Geography, Topography and Vegetation

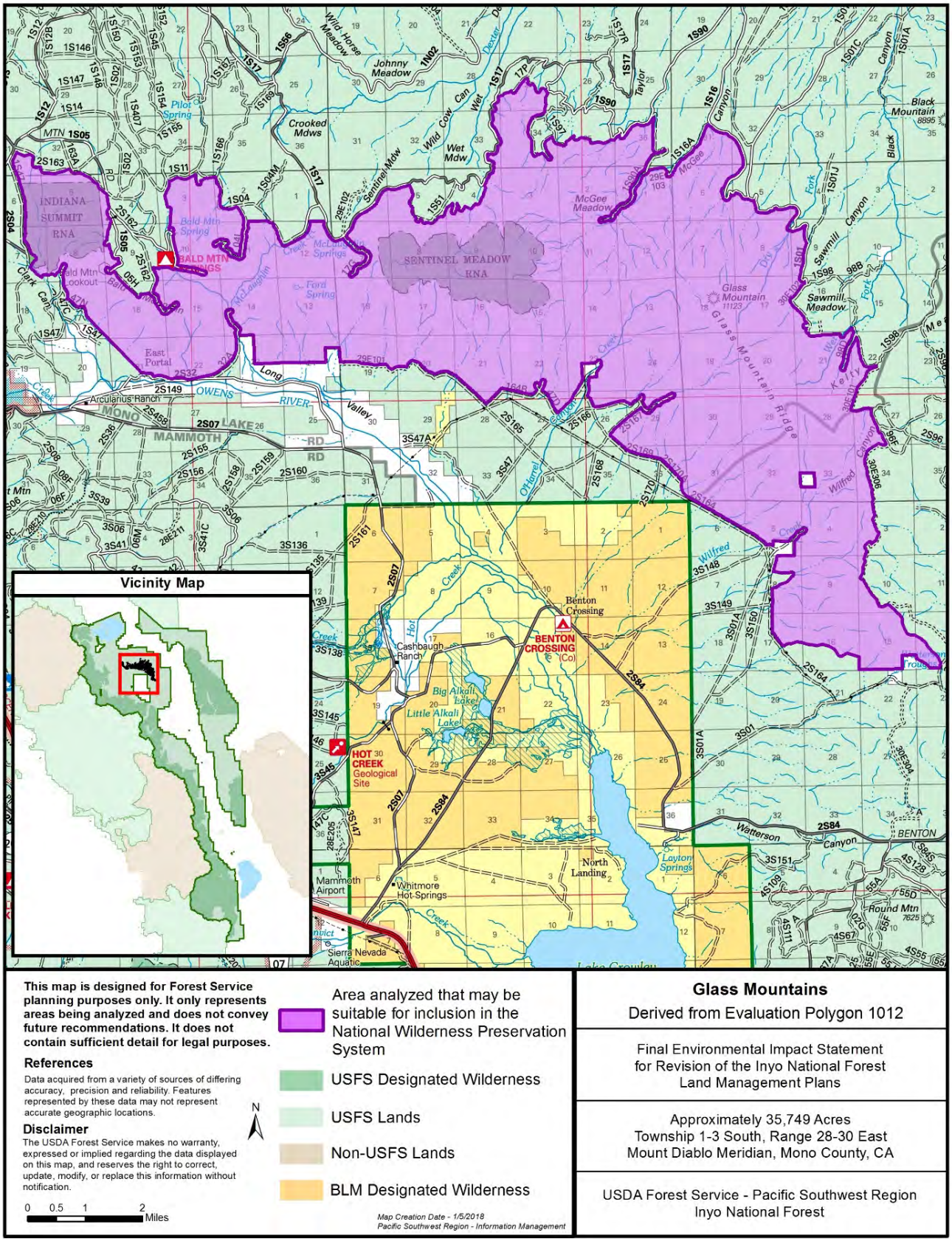
The Glass Mountains and the Long Valley Caldera are part of the spectacular landscape formed by volcanic activity in the eastern Sierra Nevada Mountains over the past 4 million years. Volcanic eruptions between 2.1 and 0.8 million years ago formed the lava domes and rhyolite or obsidian flows of the Glass Mountains on the northeastern rim of the caldera. Elevations range from 7,000 to over 11,000 feet. The majority of the area is mid-elevation forests (Jeffrey pine and mixed-conifer forests) with some high forests (subalpine, such as whitebark pine) along the southern end and pinyon woodlands in the foothills. Numerous perennial channels are present, as well as numerous intermittent channels.

Current Uses

The majority of this area is managed as inventoried roadless area, research natural areas, and priority sage-grouse habitat. Active sage-grouse habitat restoration, watershed restoration, and aspen restoration is occurring in this area. Livestock grazing occurs in the area, and allotments include fences and spring boxes. There are several cultural resource sites in the area. Outfitting and guiding under special use authorization occurs in the area. The Inyo National Forest typically issues several authorizations for summer backpacking and hiking trips by credited educational groups each year. The area receives low to moderate amounts of dispersed recreation use including camping, hiking, hunting and cross-country skiing. There is an existing use trail (not a forest system trail) to the summit of Glass Mountain from Sawmill Meadow. A Forest Service communication site on Glass Mountain is the only other improvement in the area. The Forest Service periodically uses helicopters to access the site and maintain the communication system. There is one inholding in the area, a 40-acre parcel west of Wilfred Canyon. There is no known existing road access to the inholding.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

The area has moderate ecological integrity, and generally appears to reflect ecological conditions that would normally be associated with the area without human intervention. Native fish and fishless areas were stocked with non-native trout species, which has affected aquatic ecologic integrity. The area provides good opportunities for solitude and primitive and unconfined recreation. There are no forest system trails or other recreation facilities within the area. The steep topography and lack of surface water supports a remote experience from the sights and sounds of people inside the wilderness. The sense of remoteness from occupied and modified areas outside the wilderness may be diminished along the area's periphery by motorized vehicle use on forest system roads. There are unauthorized routes in the area, which are expected to return to natural conditions through passive restoration processes.


Vicinity Map
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USFS Designated Wilderness
USFS Lands
Non-USFS Lands
BLM Designated Wilderness
Map Creation Date - 1/5/2018
Pacific Southwest Region - Information Management
Glass Mountains
Derived from Evaluation Polygon 1012
Final Environmental Impact Statement
for Revision of the Inyo National Forest
Land Management Plans
Approximately 35,749 Acres
Township 1-3 South, Range 28-30 East
Mount Diablo Meridian, Mono County, CA
USDA Forest Service - Pacific Southwest Region
Inyo National Forest
INDIANA SUMMIT RNA
SENTINEL MEADOW RNA
BALD MTN SPRINGS
BENTON CROSSING (Co)
HOT CREEK Geological Site
Benton Crossing
Cashbaugh Ranch
Big Alkali Lake
Little Alkali Lake
Whitmore Hot Springs
Mammoth Airport
North Landing
Sierra Nevada Aquatic
Arcularius Ranch
East Portal
Glass Mountain
McGee Meadow
Sawmill Meadow
Johnny Meadow
Crooked Mdws
Wet Mdw
Black Mountain
Round Mtn
Layton Springs
Watterson Canyon
Wilfred Canyon
Glass Mountain Ridge
Long Valley
OWENS RIVER
MONO LAKE
MAMMOTH RD

Figure B-18. Map of Glass Mountains area analyzed as recommended wilderness in alternative C

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Good opportunities for solitude and primitive and unconfined recreation.
- The diversity and intact condition of the ecological types in the area.
- Geologic features that are both outstanding landscape features and features of scenic value.

Golden Trout Wilderness Addition – East

This recommendation was derived from Wilderness Evaluation Polygon 1391.

Number of Acres

The area is approximately 6,008 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Golden Trout Wilderness Addition – East map (Figure B-19.). The area is contiguous with the Golden Trout Wilderness along a portion of its southwest boundary. The remaining boundary follows National Forest System roads and the forest administrative boundary, making it fairly easy to locate on the map and on the ground. The surrounding area is managed by the Forest Service, both the Inyo National Forest and Sequoia National Forest.

General Geography, Topography and Vegetation

This area includes Monache Mountain and is located west of Monache Meadows. Ecosystem types include red fir, sagebrush, subalpine forest and white fir. The topography includes gentle to moderate slopes. The elevation ranges from 4,500 to 9,400 feet.

Current Uses

Grazing and range improvements occur in the Monache area and there has been some headcut and stream improvement work. Several cultural resources are in the area. Current primitive recreation activities in this area include hiking, backpacking and horseback riding on one forest system trail that accesses the Golden Trout Wilderness, and deer hunting in the fall. There are some opportunities for wildlife observation, photography and enjoying nature on the volcanic Monache Mountain. Several cultural resources occur in this area.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

The area has moderate ecological integrity. The area moderately reflects conditions that would normally be associated with an area absent of human intervention. The potential for encounters with other visitors is low to medium. Motorized recreation just outside the area may impact opportunities for solitude. There may be opportunities for primitive and unconfined recreation.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.

- Opportunities for primitive and unconfined recreation.
- The area is contiguous with existing designated wilderness.

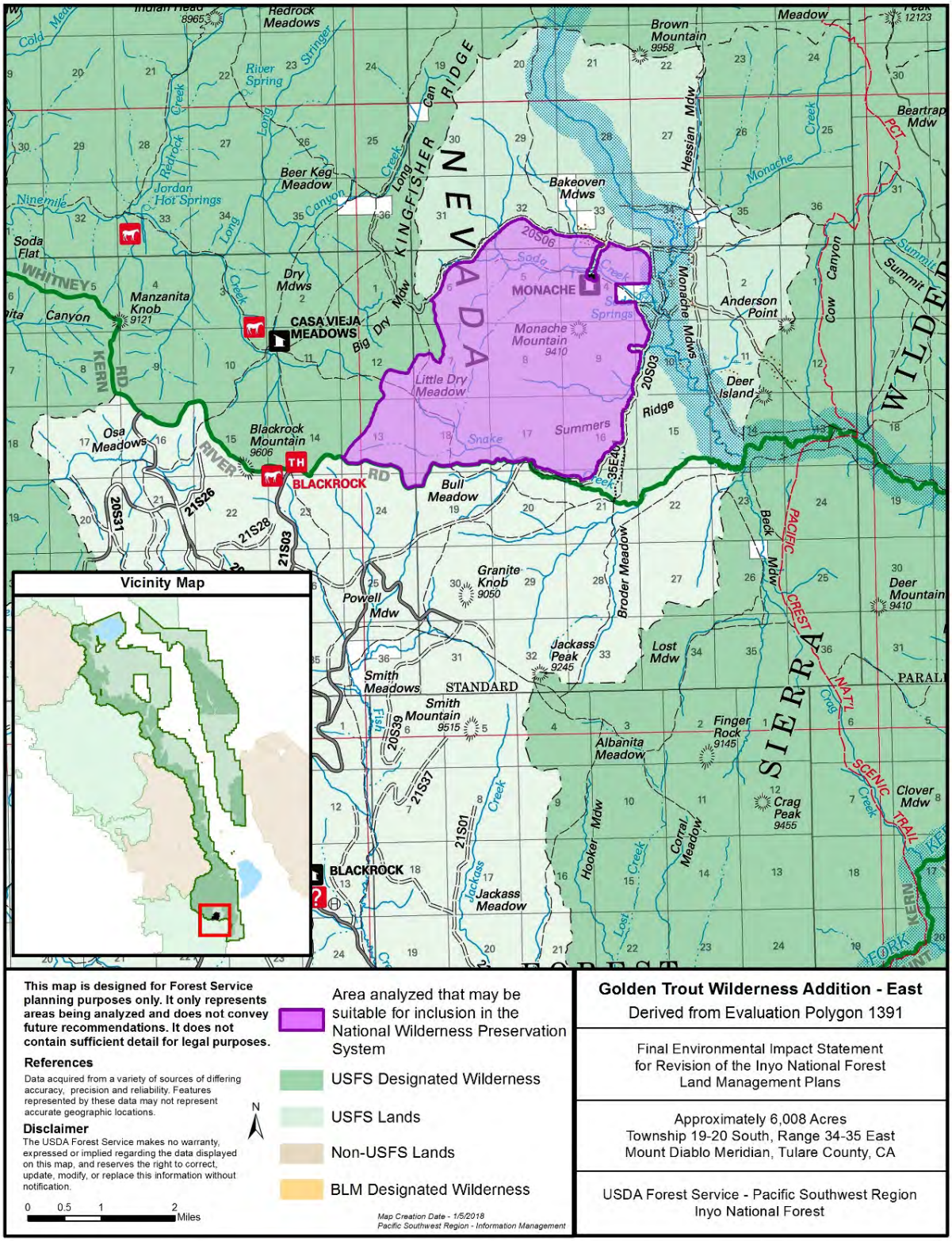


Figure B-19. Map of Golden Trout Wilderness Addition – East area analyzed as recommended wilderness in alternative C

Huntoon Creek

This recommendation was derived from Wilderness Evaluation Polygon 1361.

Number of Acres

The area is approximately 8,876 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Huntoon Creek map (Figure B-20).

The boundary follows the California-Nevada state line, National Forest System roads, and the forest administrative boundary, making it fairly easy to locate on the map and on the ground. The surrounding area is managed by the Forest Service.

General Geography, Topography and Vegetation

This area is located in the Excelsior Mountains and includes Huntoon Creek. The elevation ranges from 7,200 to 7,800 feet. Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands and blackbrush. The topography is characterized by low rolling hills mostly comprised of pinyon woodland and shrublands.

Current Uses

Currently, the area has low recreation use due to remoteness of the area and limited water. The polygon is managed as inventoried roadless areas. The northern portion of the polygon is in sage-grouse priority habitat. The most southeastern portion of the area occurs within the Montgomery Wild Horse Management Area; potential future management activities include fencing, corrals, and helicopter use.

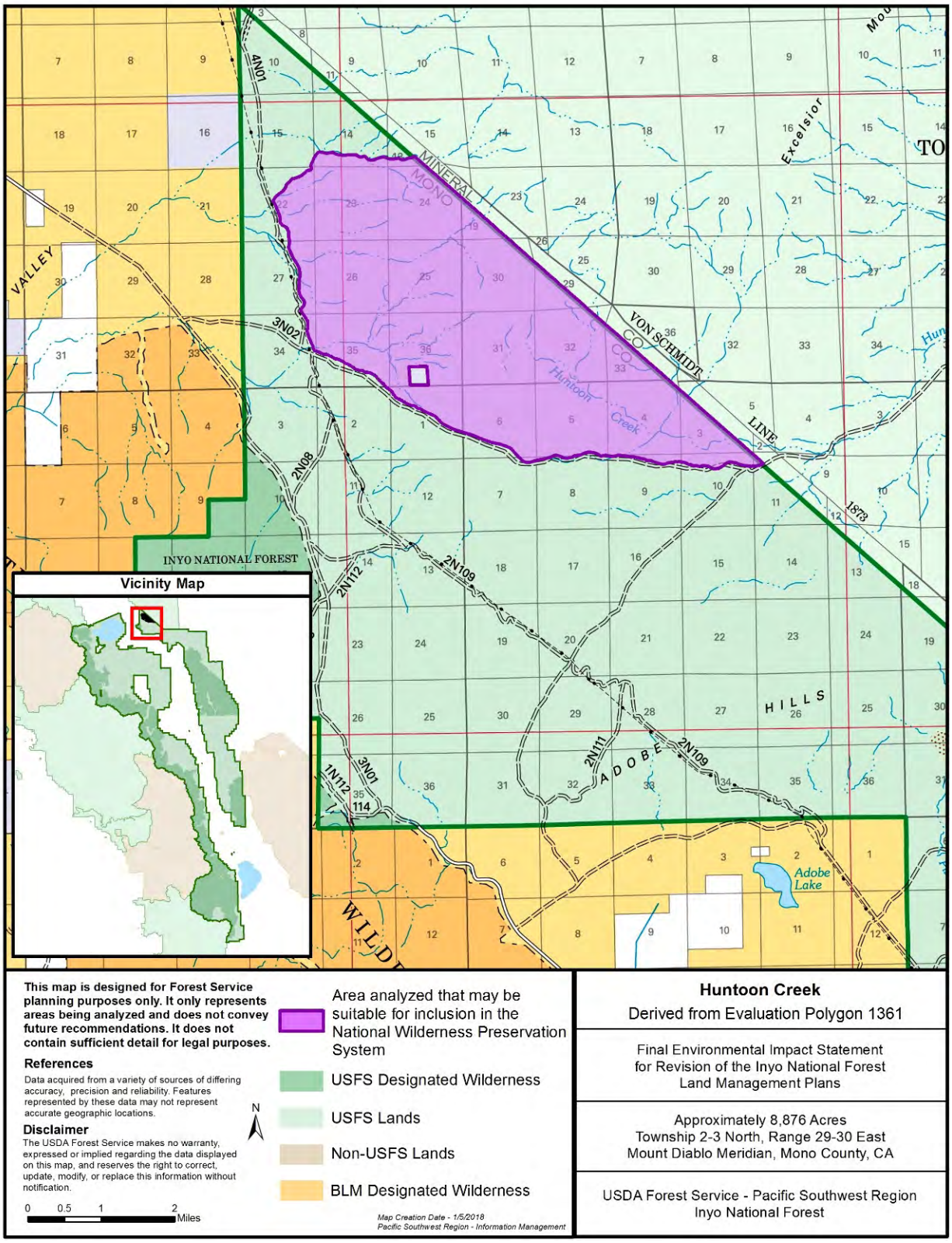
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

This area has high ecological integrity with few alterations to natural conditions. This polygon is very remote, with good opportunities for solitude. A power line corridor may be visible from some of the area. Visitors may also be able to hear traffic from the roads that are located along the northern, western and southern perimeters. There is a high opportunity to engage in primitive and unconfined recreation, including cross-country hiking, hunting, wild horse viewing and general forest exploration. There is one private land inholding (40-acre parcel) in the southwestern corner of the polygon. The land owner is unknown, as is access to the private land parcel. Managing the polygon to preserve its wilderness characteristics would be affected by overlap with the Montgomery Wild Horse Management Area and priority habitat for sage-grouse, which may require management activities inconsistent with wilderness.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Good opportunities for solitude and primitive and unconfined recreation.


Vicinity Map
INYO NATIONAL FOREST
MINERAL
MONO
CO
VON SCHMIDT
LINE
Excelsior
VALLEY
Huntoon Creek
Adobe Lake
HILLS
ADOBE
WILD
4N01
3N02
2N08
2N09
2N12
2N11
3N01
1N12
1873
114
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Area analyzed that may be suitable for inclusion in the National Wilderness Preservation System
USFS Designated Wilderness
USFS Lands
Non-USFS Lands
BLM Designated Wilderness
Map Creation Date - 1/5/2018
Pacific Southwest Region - Information Management
Huntoon Creek
Derived from Evaluation Polygon 1361
Final Environmental Impact Statement for Revision of the Inyo National Forest Land Management Plans
Approximately 8,876 Acres
Township 2-3 North, Range 29-30 East
Mount Diablo Meridian, Mono County, CA
USDA Forest Service - Pacific Southwest Region
Inyo National Forest

Figure B-20. Map of Huntoon Creek area analyzed as recommended wilderness in alternative C

Inyo Mountain Wilderness Addition

This recommendation was derived from Wilderness Evaluation Polygon 1236.

Number of Acres

The area is approximately 7,479 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Inyo Mountain Wilderness Addition map (Figure B-21).

A small portion at the southern end of this area (The Narrows) is contiguous with the Inyo Mountain Wilderness. The boundary follows National Forest System roads and trails, making it fairly easy to locate on the map and on the ground. The surrounding area is managed by the Forest Service.

General Geography, Topography and Vegetation

This area is west of Saline Valley Road, north of a Forest Service motorized trail, east of Andrews Mountain, and south of Eureka Valley Road. Ecosystem types include pinyon-juniper, sagebrush, subalpine forest, and xeric shrublands and blackbrush. The topography includes canyons, including Marble Canyon, extremely rugged terrain; and high elevation desert plateaus with steep to gentle slopes along the eastern side. Marble Canyon is a unique geologic feature in this area.

Current Uses

The majority of the polygon is inventoried roadless area. The area includes prehistoric and historic cultural resources sites. Marble Canyon is a scenic destination for day hikers. Off highway vehicle use occurs along the motorized trails surrounding the southern and western boundary. Cross-country hiking and backpacking are limited due to the lack of water within this area.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

There is low human impact to plant and wildlife communities. The opportunity for solitude is limited due to the proximity to motorized recreation. There are opportunities for primitive and unconfined recreation; however that may be limited to due lack of water. There are developments related to mining activity as well as range improvements.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Some opportunities for primitive and unconfined recreation.

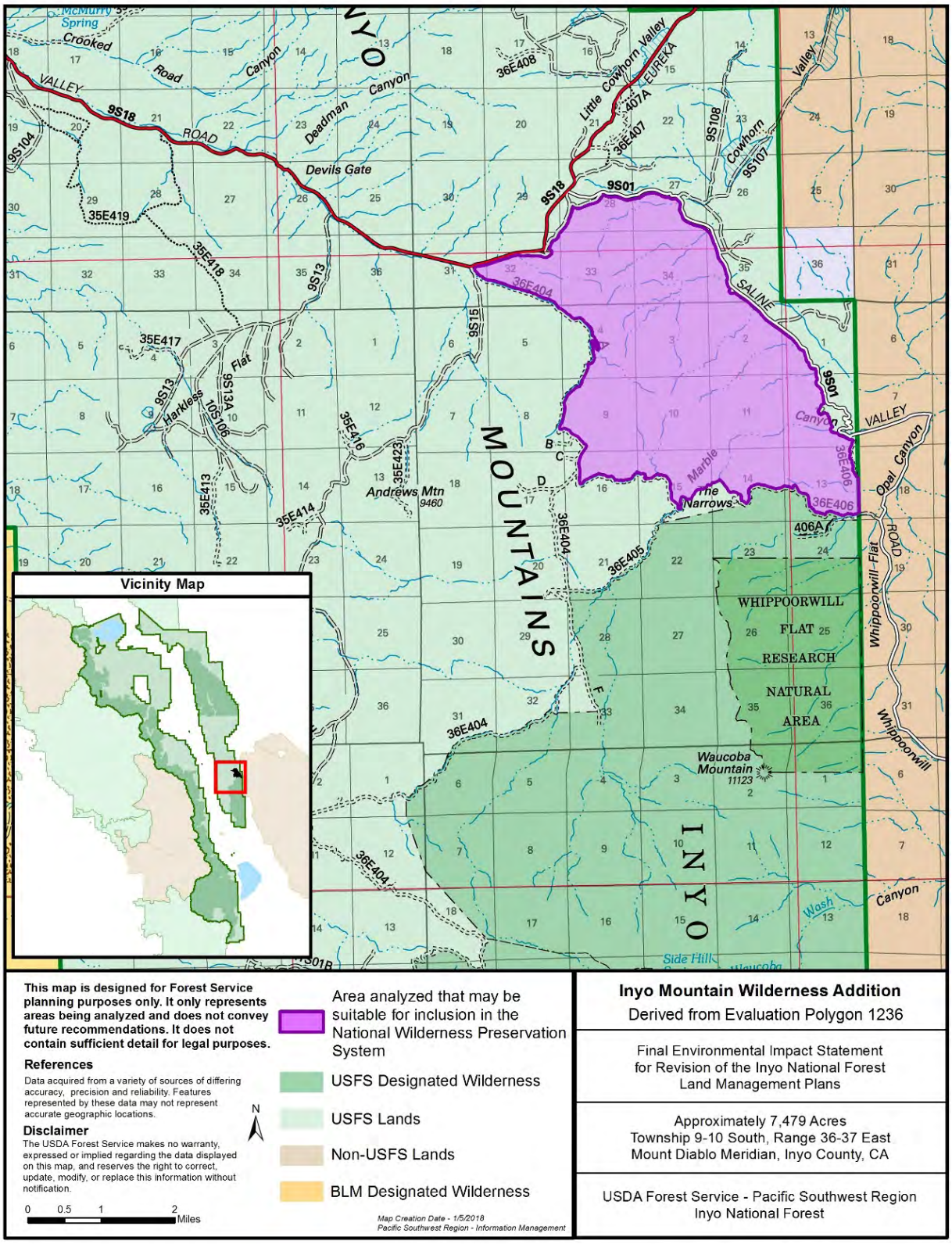


Figure B-21. Map of Inyo Mountain Wilderness Addition area analyzed as recommended wilderness in alternative C

Marble Canyon

This recommendation was derived from Wilderness Evaluation Polygon 1248.

Number of Acres

The area is approximately 15,867 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Marble Canyon map (Figure B-22).

The boundary follows several roads, motorized trails, and the forest administrative boundary, making it fairly easy to locate on the map and on the ground. The adjacent land is managed by either the Forest Service or the Bureau of Land Management. The wilderness boundary excludes existing California State Highway System rights-of-ways due to the 200 foot setback from authorized roads and highways used when determining the wilderness boundaries. The northern boundary follows forest road 07S16, leading to the western boundary which follows the National Forest administrative boundary. This continues along the southern boundary, which follows topographic features and Highway 168 East. The eastern boundary follows motorized trails, and topographic features until it reconnects with forest road 07S16.

General Geography, Topography and Vegetation

This area is located west of White Mountain Road and the Ancient Bristlecone Pine Forest, south of Black Canyon, and north of Highway 168. It includes Black Mountain. Ecosystem types include pinyon-juniper, sagebrush, subalpine forest and xeric shrublands and blackbrush. The terrain is extremely steep and rugged with elevations ranging from 5,000 to 10,400 feet.

Current Uses

The majority of the area is managed as inventoried roadless area. There is some firewood harvest occurring in the area from Westgard Pass Road. The area includes historic and prehistoric structures. Current recreation uses include hiking, horseback riding, hunting, and nature viewing.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

The area has ecological integrity with mostly natural species composition. The area largely reflects conditions that would normally be associated with the area absent human intervention. There are numerous motorized trails protruding into the polygon. The opportunity for solitude is limited due to proximity to the road and motorized trail system. The potential for encounters is very low to medium. While opportunities for primitive recreation do exist, travel in the lower elevation desert environment is challenging due to the lack of surface water and steep topography. There is limited opportunity to reshape the polygon to make it more suitable or manageable for wilderness characteristics due to the proximity to roads and motorized trails.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.

- Opportunities for primitive and unconfined recreation.
- Opportunity to add underrepresented ecosystems to the National Wilderness Preservation System.

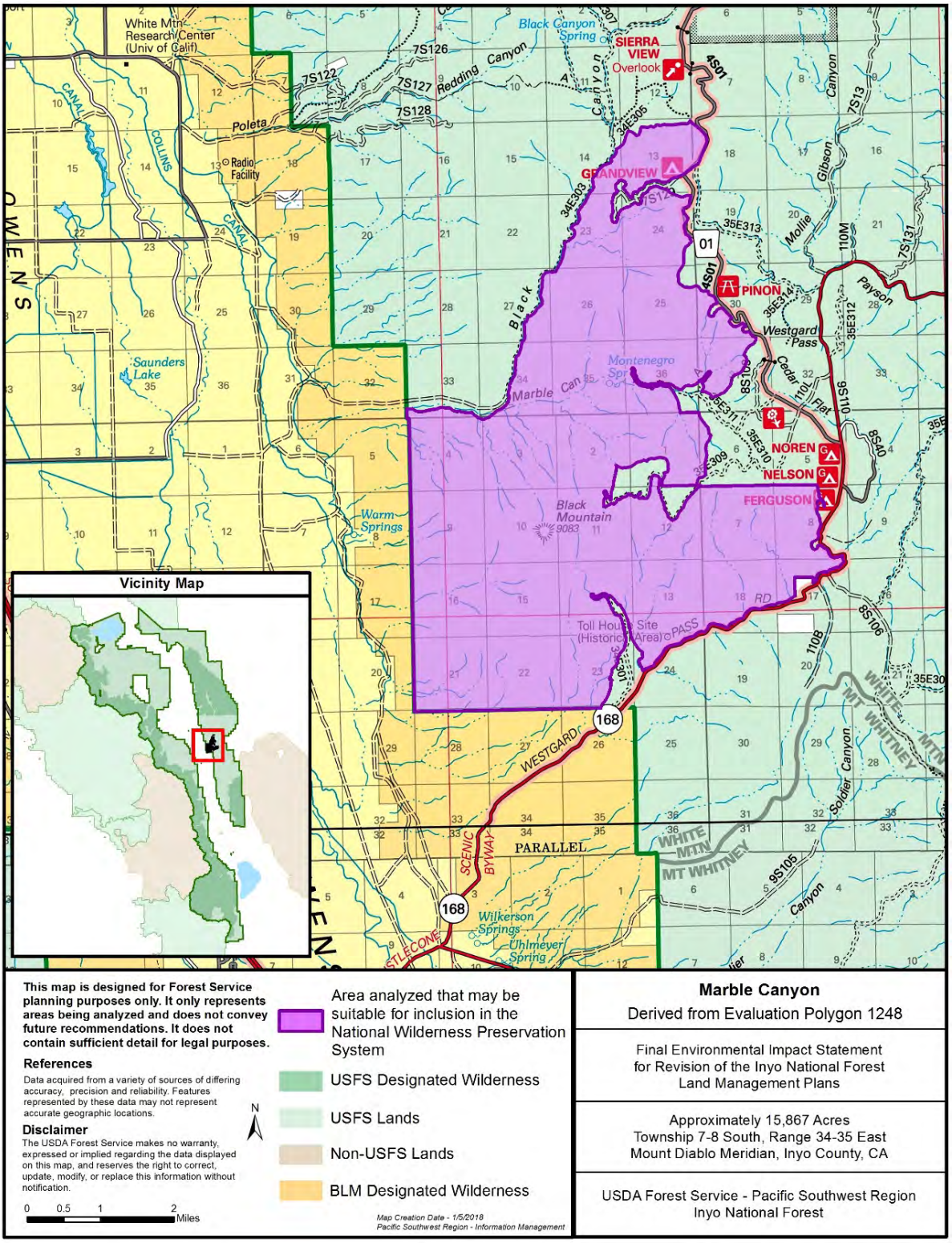


Figure B-22. Map of Marble Canyon area analyzed as recommended wilderness in alternative C

Marble Creek

This recommendation was derived from Wilderness Evaluation Polygon 1308.

Number of Acres

The area is approximately 13,707 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Marble Creek map (Figure B-23).

This area is contiguous with the White Mountains Wilderness along its western side. The boundary follows National Forest System roads, and the forest administrative boundary, making it fairly easy to locate on the map and on the ground. The Marble Canyon road is excluded from this polygon, the boundary follows this road based on a 200 foot buffer on each side of the road. The adjacent land is managed by either the Forest Service or the Bureau of Land Management.

General Geography, Topography and Vegetation

This area is located on the east side of the White Mountains between Indian Creek on the north and Leidy Creek to the south. Ecosystem types include pinyon-juniper and xeric shrublands and blackbrush. The elevation ranges from 5,200 to 9,000 feet. There is steep terrain in the western portion of the polygon, but in the eastern portion it is relatively flat and open.

Current Uses

The western portion of the polygon is located within a cattle allotment. Guided hunting occurs in this polygon. There is one water right. The western portion of polygon is managed as inventoried roadless area. The entire polygon occurs within the White Mountain wild horse territory. The polygon is located adjacent to an old mining site, where mining activity may still occur.

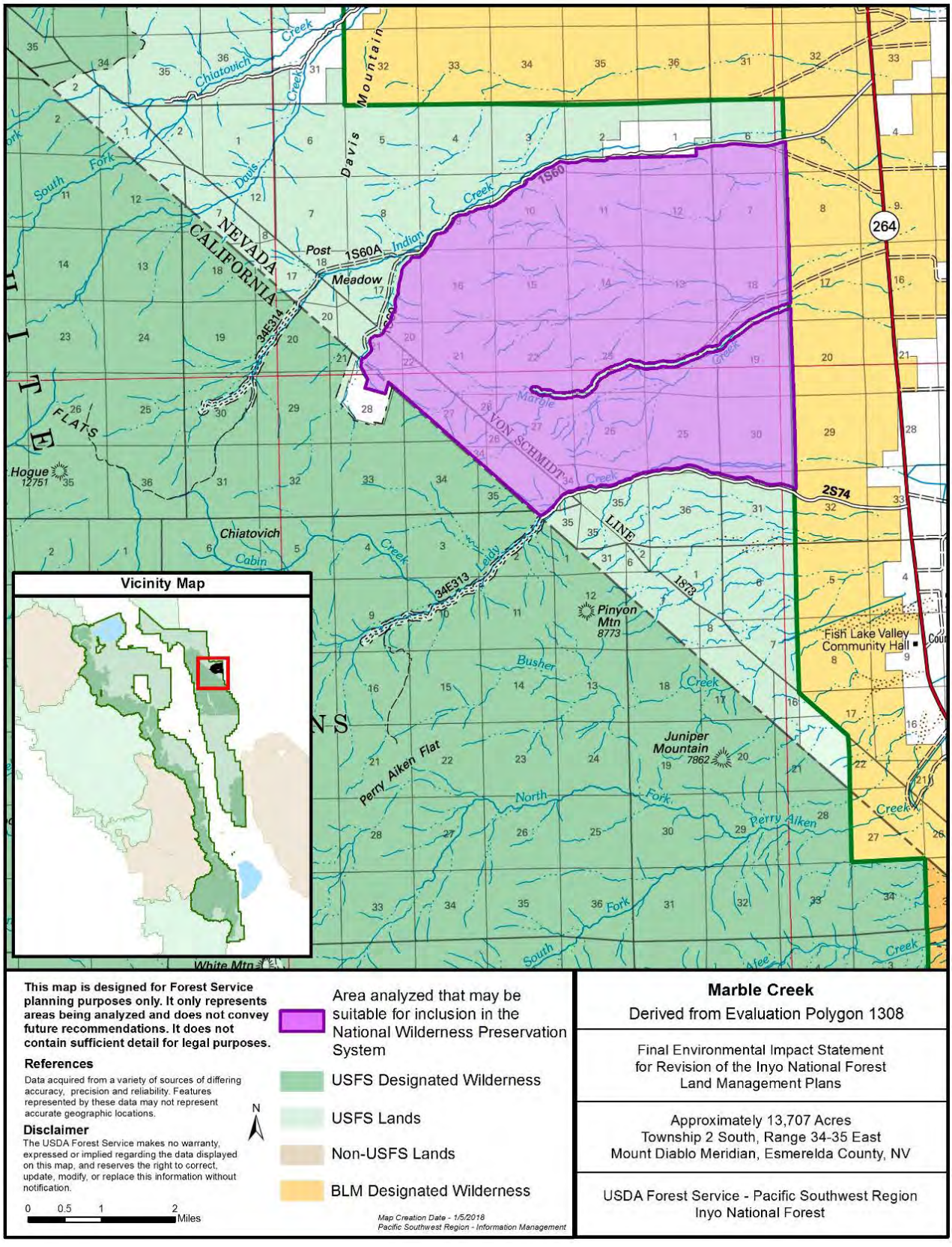
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

The area has moderate to high ecological integrity with some invasive plant species. Visibility to private land development, power lines, and Highway 264 has the potential to impact the opportunity for solitude. Most of the area is free from motorized noise, especially along the western perimeter of the polygon. The northern and southern perimeters are bounded by lightly used roads. There is low to moderate potential for encounter with other visitors. The area is largely undeveloped and there are opportunities for primitive and unconfined recreation, such as cross-country hiking, hunting and general forest exploration, particularly along the western portion of the polygon.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area during the wilderness inventory and evaluation process.
- Opportunities for primitive and unconfined recreation.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USFS Lands
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Marble Creek
Derived from Evaluation Polygon 1308
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Land Management Plans
Approximately 13,707 Acres
Township 2 South, Range 34-35 East
Mount Diablo Meridian, Esmerelda County, NV
USDA Forest Service - Pacific Southwest Region
Inyo National Forest
Davis Mountain
Chiatovich Creek
Davis Creek
South Fork Davis Creek
NEVADA
CALIFORNIA
Post Meadow
1S60
1S60A
Indian Creek
34E314
Marble Creek
VON SCHMIDT'S LINE
2S74
264
Hogue 12751
FLATS
Chiatovich Cabin
Leidy Creek
34E313
1878
Pinyon Mtn 8773
Fish Lake Valley Community Hall
Busher Creek
Juniper Mountain 7862
Perry Aiken Flat
North Fork Perry Aiken Creek
South Fork Perry Aiken Creek
White Mtn

Figure B-23. Map of Marble Creek area analyzed as recommended wilderness in alternative C

Mazourka Peak

This recommendation was derived from Wilderness Evaluation Polygon 1236.

Number of Acres

The area is approximately 42,927 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Mazourka Peak map (Figure B-24).

The boundary follows the forest administrative boundary and National Forest System roads and trails, making it fairly easy to locate on the map and on the ground. However, the polygon is elongated vertically from north to south and roads and motorized trails protrude into the polygon, making for an irregularly shaped boundary. The surrounding area is managed by the Forest Service and Bureau of Land Management.

General Geography, Topography and Vegetation

This area is a large polygon on the west side of the Inyo Mountains Wilderness between Eureka Valley Road on the north and Mazourka Canyon on the south. It includes Mazourka Peak and Santa Rita Spring. Ecosystem types include pinyon-juniper, sagebrush, subalpine forest, and xeric shrublands and blackbrush. The topography includes the steep western escarpment of the Inyo Mountains, with steep slopes, canyons, extremely rugged terrain; and high elevation desert plateaus with steep to gentle slopes along the eastern side. The elevation ranges from 4,400 to 9,500 feet.

Current Uses

The majority of polygon is managed as inventoried roadless area. The area includes prehistoric and historic cultural resources sites.

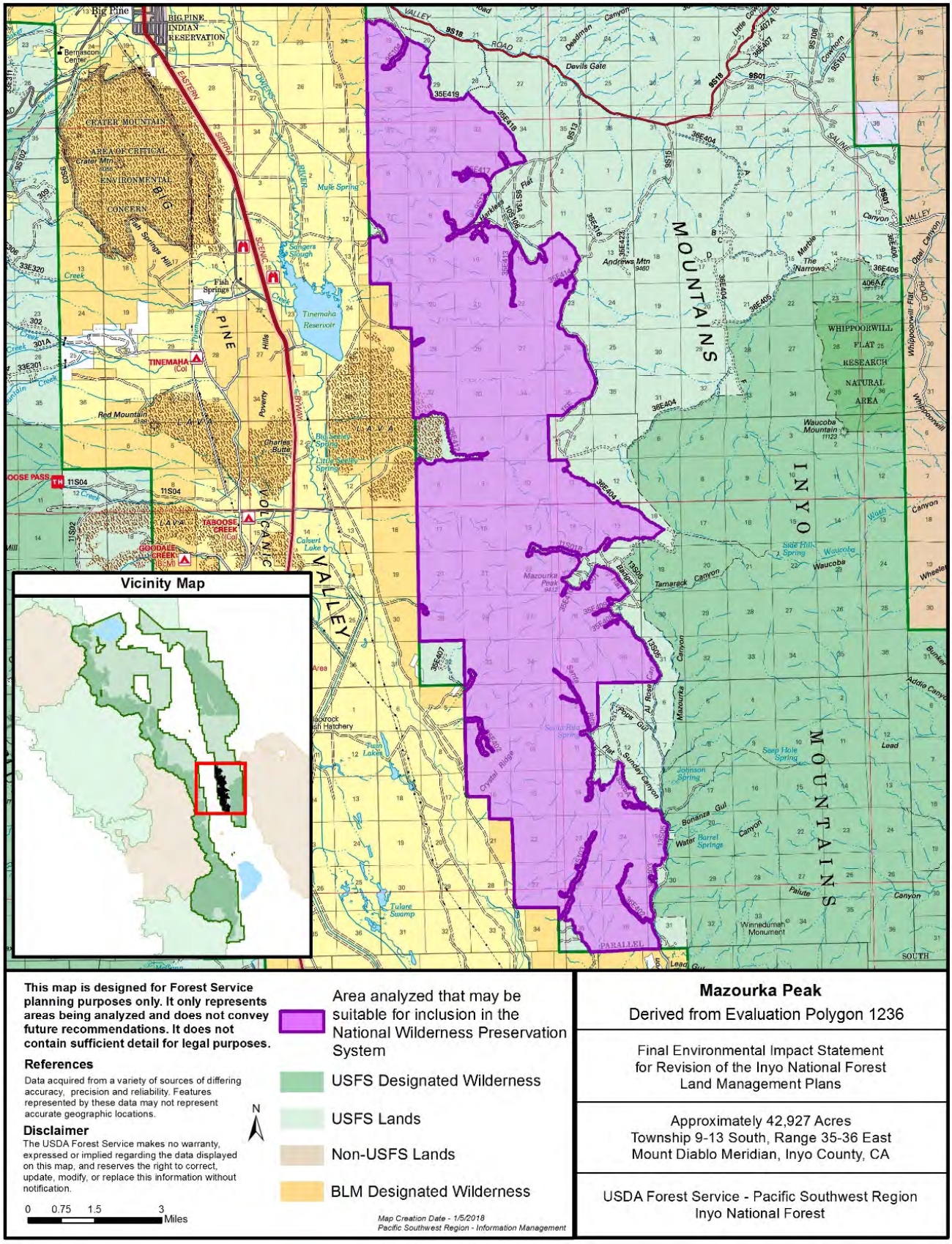
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

There is low human impact to plant and wildlife communities. The opportunity for solitude is limited due to the proximity to motorized recreation. There are opportunities for primitive and unconfined recreation. While these opportunities exist, travel in this desert environment is challenging due to the lack of surface water, steep topography and routes requiring climbing skills. There are developments related to mining activity as well as range improvements.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Opportunities for primitive and unconfined recreation.


Vicinity Map
This map is designed for Forest Service planning purposes only. It only represents areas being analyzed and does not convey future recommendations. It does not contain sufficient detail for legal purposes.
References
Data acquired from a variety of sources of differing accuracy, precision and reliability. Features represented by these data may not represent accurate geographic locations.
Disclaimer
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0 0.75 1.5 3 Miles
N
Area analyzed that may be suitable for inclusion in the National Wilderness Preservation System
USFS Designated Wilderness
USFS Lands
Non-USFS Lands
BLM Designated Wilderness
Map Creation Date - 1/5/2018
Pacific Southwest Region - Information Management
Mazourka Peak
Derived from Evaluation Polygon 1236
Final Environmental Impact Statement for Revision of the Inyo National Forest Land Management Plans
Approximately 42,927 Acres
Township 9-13 South, Range 35-36 East
Mount Diablo Meridian, Inyo County, CA
USDA Forest Service - Pacific Southwest Region
Inyo National Forest

Figure B-24. Map of Mazourka Peak area analyzed as recommended wilderness in alternative C

McBride Flat

This recommendation was derived from Wilderness Evaluation Polygon 1550.

Number of Acres

The area is approximately 10,621 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the McBride Flat map (Figure B-25). The northern boundary follows the National Forest Administrative Boundary with the Humboldt-Toiyabe National Forest. One forest system road is excluded from this northern boundary. The western boundary follows forest road 01N113 and then a topographic line connecting it to road 01N113A which leads to the southern boundary. Along the southern boundary forest road 01N34A is excluded and the boundary connects to a natural streambed then follows forest road 01N13C for the length of the southern boundary, with a few forest roads excluded, until road 01N13E. The boundary then follows a topographic line and ride to reconnect to road 01N13G. Then it follows road 01N13 for the remainder of the southern boundary and forms the western boundary at road 01N13H. The adjacent land is managed by the Forest Service. The polygon is located in both California and Nevada.

General Geography, Topography and Vegetation

This area is located in the southern end of the Excelsior Mountain area, north of the Pizona area, and southeast of Mono Lake. The elevation ranges from 7,000 to 8,400 feet. The ecosystem consists of a mosaic of pinyon-juniper woodlands and sagebrush flats, with some small alkali meadows.

Current Uses

The western portion of this polygon (in California) is managed as inventoried roadless area. The entire area occurs within the Montgomery Wild Horse Management Area; potential future management activities include fencing, corrals, and helicopter use. This area receives very low use, with access provided by two motorized trails and system roads. There are no perennial water sources, which limit cross-country recreation activities, like hiking and backpacking. Some dispersed use may occur along the roads.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

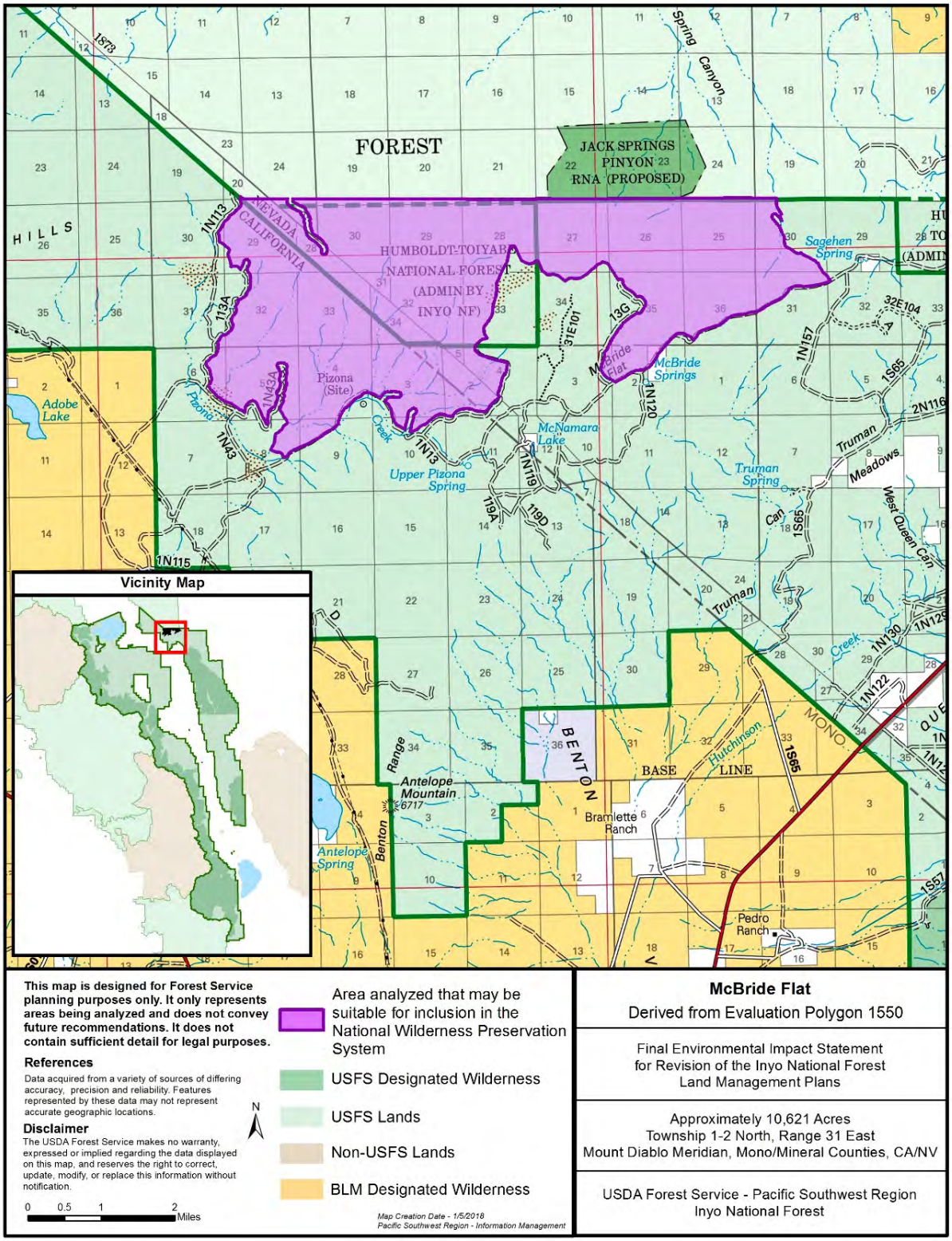
The area has high ecological integrity with few alterations to natural conditions. There are opportunities for solitude through the majority of this polygon. There is likely opportunity for primitive and unconfined recreation, although the extent and amount of use may be limited due to the lack of water sources in the area. The remoteness of this area from other forest management activities and uses may make it difficult to manage for wilderness characteristics. The area occurs within the Montgomery Pass Wild Horse Territory, where habitat restoration activities or horse population management activities may be needed.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Polygon was not previously included in the final inventory, but has been added due to an administrative boundary change. The public has not had an opportunity to provide input on this area as potentially recommended wilderness.

- The intact condition of the ecosystem types.
- Good opportunities for solitude and primitive and unconfined recreation.


FOREST
JACK SPRINGS PINYON RNA (PROPOSED)
HUMBOLDT-TOIYABE NATIONAL FOREST (ADMIN BY INYO NF)
NEVADA
CALIFORNIA
Vicinity Map
Sagehen Spring
McBride Springs
McBride Flat
Pizona (Site)
Adobe Lake
McNamara Lake
Upper Pizona Spring
Truman Spring
Truman Meadows
West Queen Can
Antelope Mountain 6717
Antelope Spring
Bramlette Ranch
Pedro Ranch
BENTON
BASE LINE
Hutchinson
MONO
Range
Benton
Truman
Creek
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N
0 0.5 1 2 Miles
Area analyzed that may be suitable for inclusion in the National Wilderness Preservation System
USFS Designated Wilderness
USFS Lands
Non-USFS Lands
BLM Designated Wilderness
Map Creation Date - 1/5/2018
Pacific Southwest Region - Information Management
McBride Flat
Derived from Evaluation Polygon 1550
Final Environmental Impact Statement for Revision of the Inyo National Forest Land Management Plans
Approximately 10,621 Acres
Township 1-2 North, Range 31 East
Mount Diablo Meridian, Mono/Mineral Counties, CA/NV
USDA Forest Service - Pacific Southwest Region
Inyo National Forest

Figure B-25. Map of McBride Flat area analyzed as recommended wilderness in alternative C

Piper Mountain Wilderness Additions (1)

This recommendation was derived from Wilderness Evaluation Polygons 1246. There are two slightly different boundaries for this area, one for alternative C and one for alternative B. The alternative B version of this area was previously referred to as Deep Springs South in earlier information shared with the public.

Number of Acres

The area for alternative C is approximately 11,313 acres. The area for alternative B is approximately 11,840 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Piper Mountain Wilderness Additions map (Figure B-26).

In alternative C, the boundary follows the original boundary of the parent evaluation polygon. The area's southeast boundary is contiguous with the Piper Mountains Wilderness. The remaining boundary follows National Forest System roads and motorized trails, and the forest administrative boundary, making the area fairly easy to locate on maps and on the ground. The adjacent land is managed by either the Forest Service or the Bureau of Land Management.

In alternative B, the boundary was refined to make it more clearly identifiable and use setbacks from roads and motorized trails that were consistent with other wilderness boundary setbacks on the forest. The northern and western sections of the boundary closely follow National Forest System roads and motorized trails. The southern boundary generally follows a prominent natural feature, an east-west trending ridgeline. The eastern end of the southern boundary departs the ridgeline to become a 200 foot offset from a National Forest System road. The eastern boundary is formed by the forest's administrative boundary.

General Geography, Topography and Vegetation

This area is located at the northern end of the Inyo Mountains, an area where complex geological forces have produced a striking desert range that contrasts with Deep Springs Valley. The area is north of the boundary between the White Mountain and Mt. Whitney Ranger Districts and southeast of Westgard Pass. Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands and blackbrush. The topography includes steep to gentle slopes. Elevation ranges from 5,000 to 8,600 feet.

Current Uses

The entire polygon is managed as inventoried roadless area. There are a large number of cultural resource sites. Portions of the area are also used as a geological field study area. The area includes one water right. There are general tribal concerns regarding tribal access and use.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

The area has intact ecological integrity and reflects conditions that would normally be associated with the area absent human intervention. Some historic clearing/harvesting for mining is evident. The steep topography and lack of surface water supports a remote experience from the sights and sounds of people inside the wilderness. The sense of remoteness from occupied and modified areas outside the wilderness may be diminished along the area's periphery by motorized vehicle use on forest system roads. There are unauthorized routes in the area, which are expected to return to natural conditions through passive restoration processes. There are opportunities for

primitive and unconfined recreation. Travel in the lower elevation desert environment is challenging due to the lack of surface water and steep topography. The pinyon-juniper woodlands and subalpine areas offer primitive recreation opportunities typical of the Great Basin: hiking, horseback riding and deer hunting. This area's other features of value include the Poleta Fold geologic features, which have scientific and educational values, and cultural resource sites including encampments, rock rings and lithic scatters.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of Alternatives B and C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System.

Piper Mountain Wilderness Additions (2)

This recommendation was derived from Wilderness Evaluation Polygons 1242.

Number of Acres

The area is approximately 2,726 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Piper Mountain Wilderness Additions map (Figure B-26).

The boundary supports management of the area as potential wilderness because it is contiguous with the Piper Mountains Wilderness along the eastern boundary. The remaining boundary follows National Forest System Roads, making the area fairly easy to locate on maps and on the ground. The northern boundary follow forest road 08S108 until it connects to forest road 09S109 which forms the western boundary. Forest road 09S109G is excluded from this polygon and the southern boundary is formed by forest road 09S109A. The eastern boundary is adjacent to the Piper Mountain Wilderness and the National Forest administrative boundary.

General Geography, Topography and Vegetation

This area is located west of the Piper Mountains Wilderness and north of Little Cowhorn Valley. Ecosystem types include pinyon-juniper and xeric shrublands and blackbrush. The topography is flat and rolling hills. The elevation ranges from 7,600 to 8,400 feet.

Current Uses

The area is not located within an inventoried roadless area. Due to lack of surface water and extreme summer heat, the area receives low recreation use, including hiking and hunting. There are general tribal concerns regarding tribal access and use.

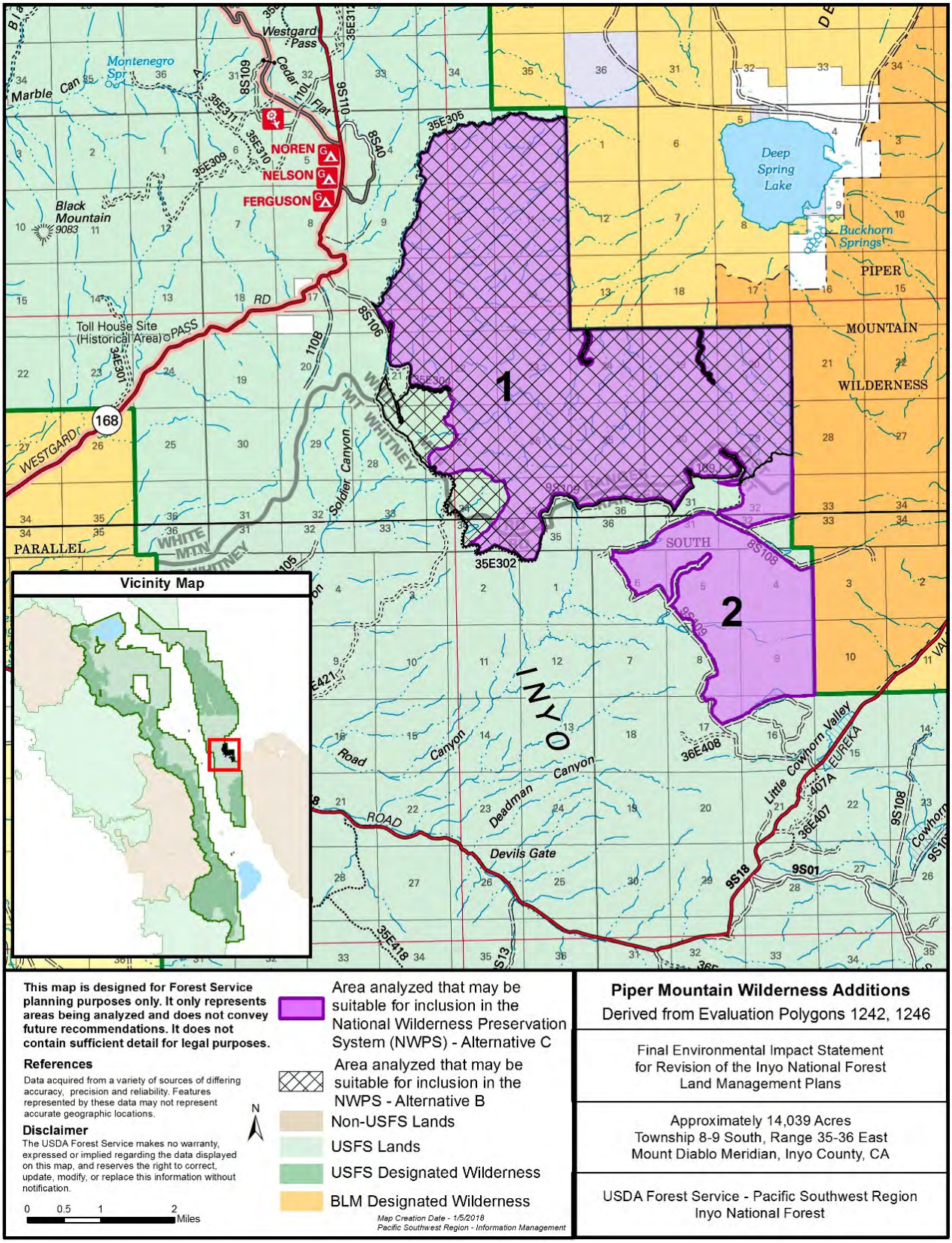
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

This area has high ecological integrity with few alterations to natural conditions. There are no known developments in the area that would degrade the undeveloped quality. The combination of alkali flats and old growth pinyon-juniper is a unique feature of this area. Potential for encountering other visitors in this area is low. There are opportunities for primitive and unconfined recreation such as cross-country hiking, general forest exploration, photography, and deer hunting. The polygon is surrounded by a road system to the north, west, and south.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Good opportunities for solitude and primitive and unconfined recreation.


Vicinity Map
1
2
INYO
Piper Mountain Wilderness Additions
Derived from Evaluation Polygons 1242, 1246
Final Environmental Impact Statement
for Revision of the Inyo National Forest
Land Management Plans
Approximately 14,039 Acres
Township 8-9 South, Range 35-36 East
Mount Diablo Meridian, Inyo County, CA
USDA Forest Service - Pacific Southwest Region
Inyo National Forest
This map is designed for Forest Service planning purposes only. It only represents areas being analyzed and does not convey future recommendations. It does not contain sufficient detail for legal purposes.
References
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Disclaimer
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0 0.5 1 2 Miles
N
Area analyzed that may be suitable for inclusion in the National Wilderness Preservation System (NWPS) - Alternative C
Area analyzed that may be suitable for inclusion in the NWPS - Alternative B
Non-USFS Lands
USFS Lands
USFS Designated Wilderness
BLM Designated Wilderness
Map Creation Date - 1/5/2018
Pacific Southwest Region - Information Management

Figure B-26. Map of Piper Mountain Wilderness addition area analyzed as recommended wilderness in alternatives B and C

Pizona-Truman Meadows

This recommendation was derived from Wilderness Evaluation Polygon 1339.

Number of Acres

The area is approximately 19,957 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Pizona-Truman Meadows map (Figure B-27).

The boundary follows the National Forest System roads, and the forest administrative boundary, making it fairly easy to locate on the map and on the ground, though it is oddly shaped due to these features. Most of the adjacent land is managed by either the Forest Service or the Bureau of Land Management.

General Geography, Topography and Vegetation

This area is located in the southern end of the Excelsior Mountains, north of Highway 6, and includes Truman Meadows, Antelope Mountain, and Upper Pizona Spring. Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands and blackbrush. The topography includes moderate rolling hills, broad, open sagebrush flats, and ancient volcanic flows. Elevations range from 6,000 to 8,000 feet.

Current Uses

The majority of the polygon is managed as inventoried roadless area. There are mining claims and a recently authorized exploration plan of operation. Watershed treatments are present in Truman Meadow. The area is within a wild horse management area. A significant prehistoric site has been formally documented in the area.

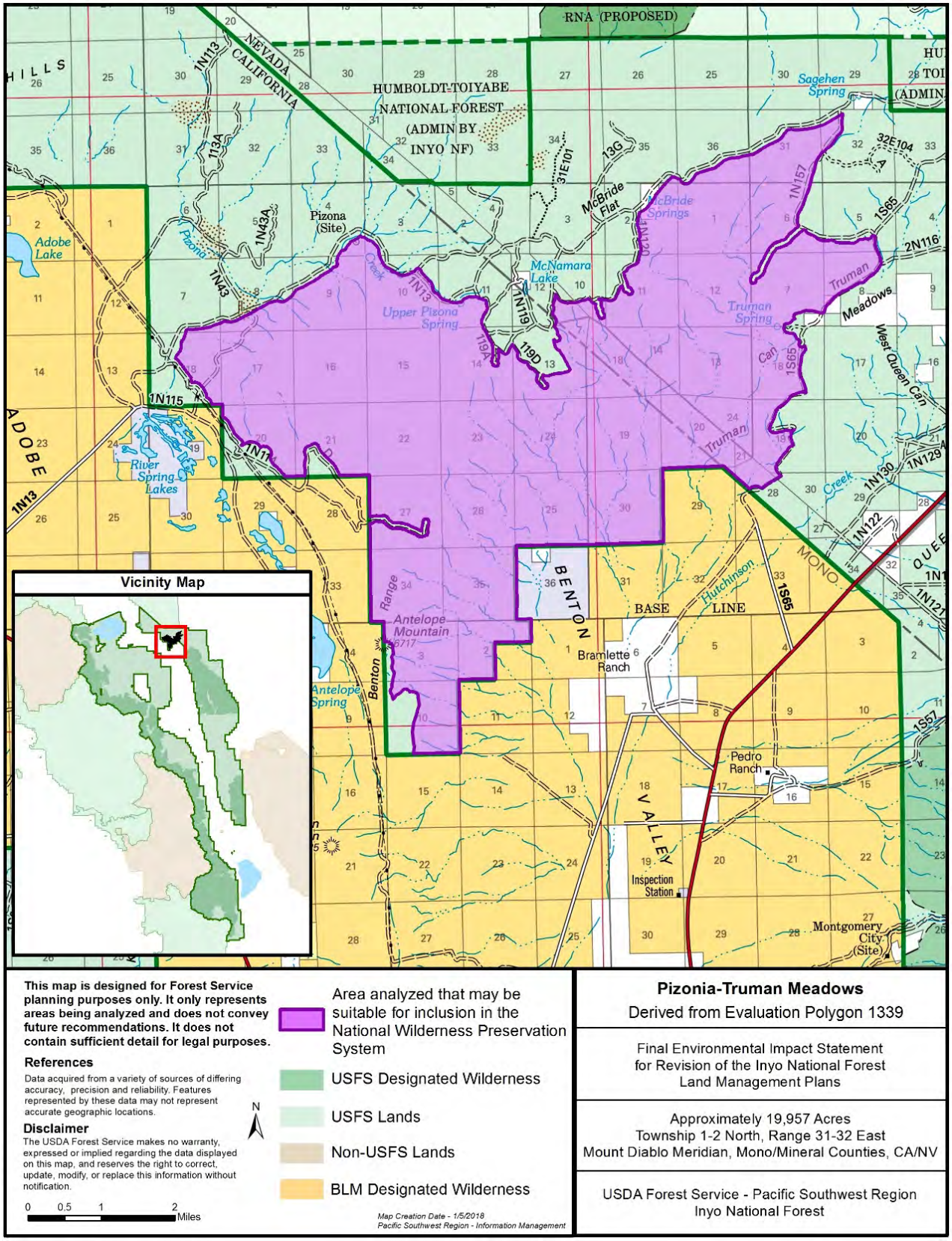
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

The area has high ecological integrity with some alterations to natural conditions. Wilderness characteristics are impacted by mining activities, as well as past vegetation management activities believed to be conducted by the military. There are developments related to historic sites and historic grazing management. Highway 6 is visible from parts of the area and power lines are visible along the western perimeter, which impacts the opportunity for solitude. However, sights and sounds are minimal throughout the remotest parts of the area. There are opportunities for primitive and unconfined recreation, including cross-country hiking, hunting, wild horse viewing and general forest exploration. Recreation opportunities may be limited by the lack of available water. The polygon has an irregular Y-shaped boundary due to the location of short spur cherry stem roads and the forest boundary. Due to the Y-shaped boundary, there is not much potential to reshape the polygon to make it more suitable or manageable for wilderness.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.


RNA (PROPOSED)
HUMBOLDT-TOIYABE
NATIONAL FOREST
(ADMIN BY
INYO NF)
NEVADA
CALIFORNIA
Sagehen Spring
McBride Flat
McBride Springs
Pizona
(Site)
Adobe Lake
Pizona Creek
McNamara Lake
Upper Pizona Spring
Truman Spring
Truman Meadows
West Queen Can
River Spring Lakes
ADOBE
Antelope Mountain
Antelope Spring
Benton Range
BENTON
BASE LINE
Hutchinson Creek
MONO
Bramlette Ranch
Pedro Ranch
VALLEY
Inspection Station
Montgomery City (Site)
Vicinity Map
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N
0 0.5 1 2 Miles
Area analyzed that may be suitable for inclusion in the National Wilderness Preservation System
USFS Designated Wilderness
USFS Lands
Non-USFS Lands
BLM Designated Wilderness
Map Creation Date - 1/5/2018
Pacific Southwest Region - Information Management
Pizonia-Truman Meadows
Derived from Evaluation Polygon 1339
Final Environmental Impact Statement
for Revision of the Inyo National Forest
Land Management Plans
Approximately 19,957 Acres
Township 1-2 North, Range 31-32 East
Mount Diablo Meridian, Mono/Mineral Counties, CA/NV
USDA Forest Service - Pacific Southwest Region
Inyo National Forest

Figure B-27. Map of Pizona-Truman Meadows area analyzed as recommended wilderness in alternative C

Redding Canyon

This recommendation was derived from Wilderness Evaluation Polygon 1248.

Number of Acres

The area is approximately 8,906 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Redding Canyon map (Figure B-28). The boundary follows several motorized trails and the forest administrative boundary, making it fairly easy to locate on the map and on the ground. The adjacent land is managed by either the Forest Service or the Bureau of Land Management. The northern boundary follows topographic contour lines, ridges, and natural stream channels before connecting to forest road 07S118. The western boundary is the National Forest administrative boundary. The southern boundary uses the National Forest administrative boundary and then forest road 07S16, which also makes up the beginning of the western boundary. The western boundary is finished by natural ridgelines, and topographic contour lines.

General Geography, Topography and Vegetation

This area is located west of White Mountain Road and the Ancient Bristlecone Pine Forest, south of Poleta Canyon, and northwest of Black Canyon. Ecosystem types include pinyon-juniper, sagebrush, subalpine forest and xeric shrublands and blackbrush. The terrain is extremely steep and rugged with elevations ranging from 5,000 to 10,400 feet.

Current Uses

The majority of the area is managed as inventoried roadless area. The area includes historic and prehistoric structures. Current recreation uses include hiking, horseback riding, hunting, and nature viewing.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

The area has ecological integrity with mostly natural species composition. The area largely reflects conditions that would normally be associated with the area absent human intervention. There are motorized trails surrounding and protruding into the polygon. The opportunity for solitude is limited due to proximity to the motorized trail system. The potential for encounters is very low to medium. While opportunities for primitive recreation do exist, travel in the lower elevation desert environment is challenging due to the lack of surface water and steep topography. There is limited opportunity to reshape the polygon to make it more suitable or manageable for wilderness characteristics due to the proximity to motorized trails.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Opportunities for primitive and unconfined recreation.
- Opportunity to add underrepresented ecosystems to the National Wilderness Preservation System.

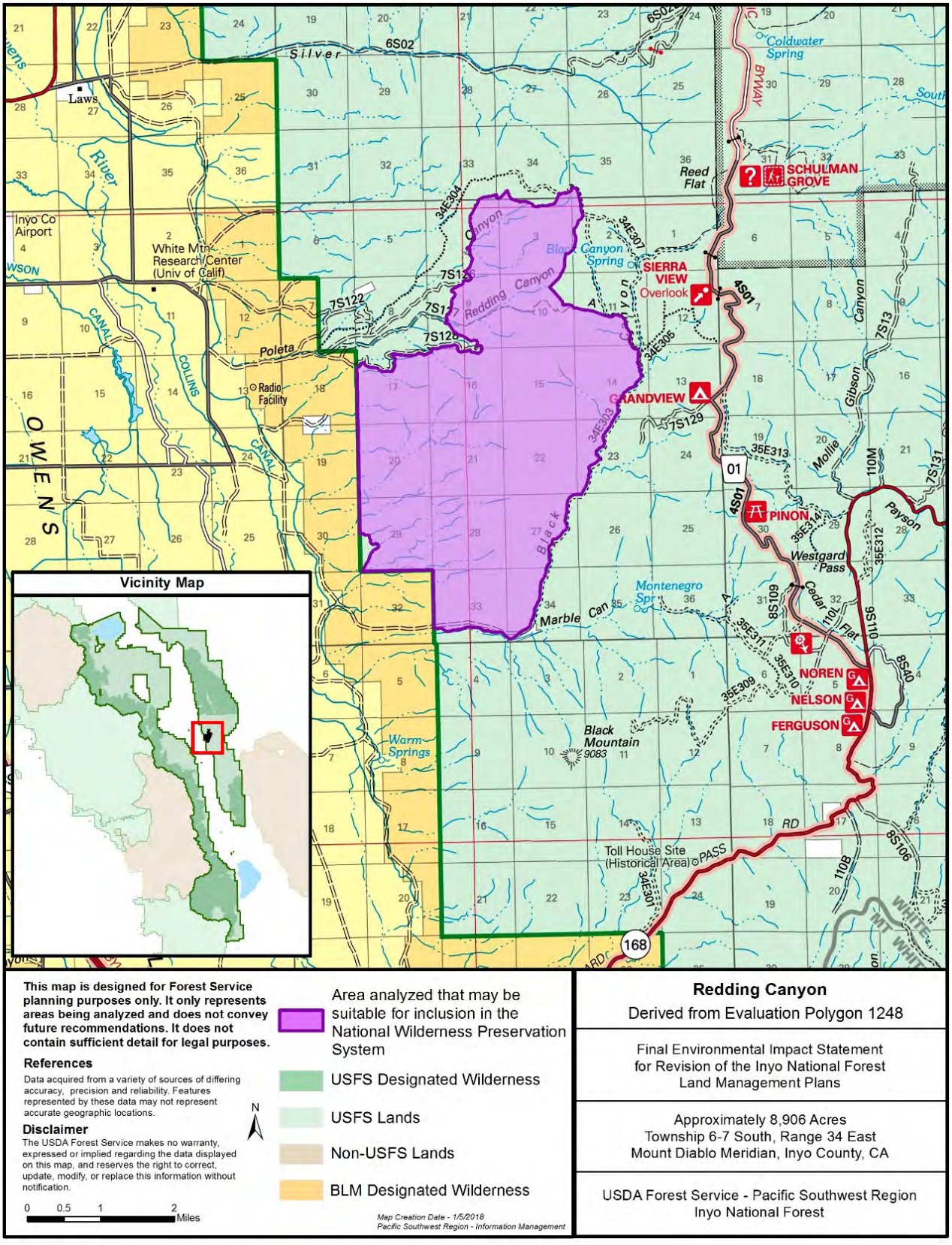


Figure B-28. Map of Redding Canyon area analyzed as recommended wilderness in alternative C

Silver Creek

This recommendation was derived from Wilderness Evaluation Polygon 1248.

Number of Acres

The area is approximately 8,635 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Silver Creek map (Figure B-29). The boundary follows roads, motorized trails, and the forest administrative boundary, making it fairly easy to locate on the map and on the ground. The adjacent land is managed by either the Forest Service, the Bureau of Land Management, or private landowners. The northern boundary follows forest road 06S02. The western boundary follows the National Forest administrative boundary, except in areas where a topographic contour line was used. The southern boundary follows natural stream channels, contour lines and ridgelines. The eastern boundary follows a ridgeline until forest road 04S01 (White Mountain road) and reconnects with forest road 06S02N.

General Geography, Topography and Vegetation

This area is located west of White Mountain Road and the Ancient Bristlecone Pine Forest, south of Silver Canyon, and north of Poleta Canyon. Ecosystem types include pinyon-juniper, sagebrush, subalpine forest and xeric shrublands and blackbrush. The terrain is extremely steep and rugged with elevations ranging from 5,000 to 10,400 feet.

Current Uses

The majority of the area is managed as inventoried roadless area. The area includes historic and prehistoric structures. Recreation use is limited within this polygon due to the ruggedness of the area and lack of access from authorized trails or roads. Some hunting may occur in the lower elevations of the polygon, but this use is limited.

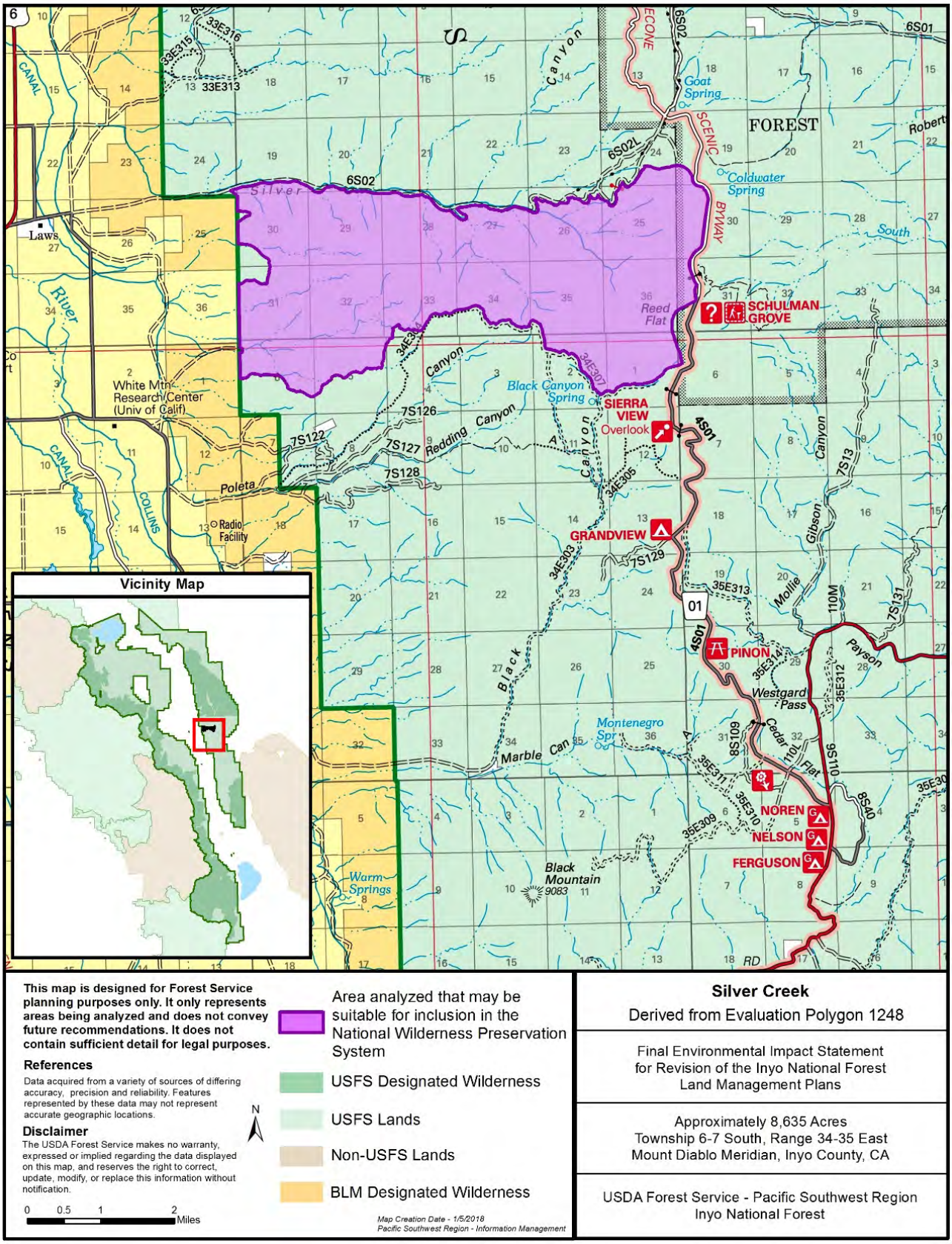
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

The area has ecological integrity with mostly natural species composition. The area largely reflects conditions that would normally be associated with the area absent human intervention. There are roads and motorized trails surrounding the polygon. The opportunity for solitude is limited due to proximity to the roads and motorized trails. The potential for encounters is very low to medium. While opportunities for primitive recreation do exist, travel in the lower elevation desert environment is challenging due to the lack of surface water and steep topography. There is limited opportunity to reshape the polygon to make it more suitable or manageable for wilderness characteristics due to the proximity to roads and motorized trails.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Opportunities for primitive and unconfined recreation.
- Opportunity to add underrepresented ecosystems to the National Wilderness Preservation System.


Vicinity Map
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N
Area analyzed that may be suitable for inclusion in the National Wilderness Preservation System
USFS Designated Wilderness
USFS Lands
Non-USFS Lands
BLM Designated Wilderness
Map Creation Date - 1/5/2018
Pacific Southwest Region - Information Management
Silver Creek
Derived from Evaluation Polygon 1248
Final Environmental Impact Statement for Revision of the Inyo National Forest Land Management Plans
Approximately 8,635 Acres
Township 6-7 South, Range 34-35 East
Mount Diablo Meridian, Inyo County, CA
USDA Forest Service - Pacific Southwest Region
Inyo National Forest
SCHULMAN GROVE
SIERRA VIEW Overlook
GRANDVIEW
PINON
NOREN
NELSON
FERGUSON
Goat Spring
Coldwater Spring
Black Canyon Spring
Montenegro Spr
Warm Springs
Reed Flat
Westgard Pass
Black Mountain 9083
White Mtn Research Center (Univ of Calif)
Radio Facility
Laws
Poleta
Silver Canyon
Redding Canyon
Marble Can
Gibson
Mollie
Payson
Cedar Flat
FOREST
SCENIC BYWAY
South
RD

Figure B-29. Map of Silver Creek area analyzed as recommended wilderness in alternative C

Soldier Canyon

This recommendation was derived from Wilderness Evaluation Polygon 1246.

Number of Acres

The area is approximately 11,024 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the Soldier Canyon map (Figure B-30). The boundary follows National Forest System roads and motorized trails, the forest administrative boundary, and private land boundaries, making it fairly easy to locate on the map and on the ground. Most of the adjacent land is managed by either the Forest Service or the Bureau of Land Management. The wilderness boundary excludes existing California State Highway System rights-of-ways due to the 200 foot setback from authorized roads and highways used when determining the wilderness boundaries.

General Geography, Topography and Vegetation

This area is located between the White Mountains and Inyo Mountains, north of Eureka Valley Road and south of Highway 168. Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands and blackbrush. The topography includes steep to gentle slopes. Elevation ranges from 5,000 to 8,600 feet.

Current Uses

The majority of the area is managed as inventoried roadless area. There are a large number of cultural resource sites. Recreation uses within this polygon are limited due to the ruggedness of the area. Hiking and horseback riding may occur along the Soldier Canyon road, but may not go further into the polygon.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

The area has ecological integrity and reflects conditions that would normally be associated with the area absent human intervention. Some historic clearing/harvesting for mining is evident. The opportunity for solitude is limited due to the proximity to motorized recreation. There are opportunities for primitive and unconfined recreation.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Opportunities for primitive and unconfined recreation.
- Opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System.

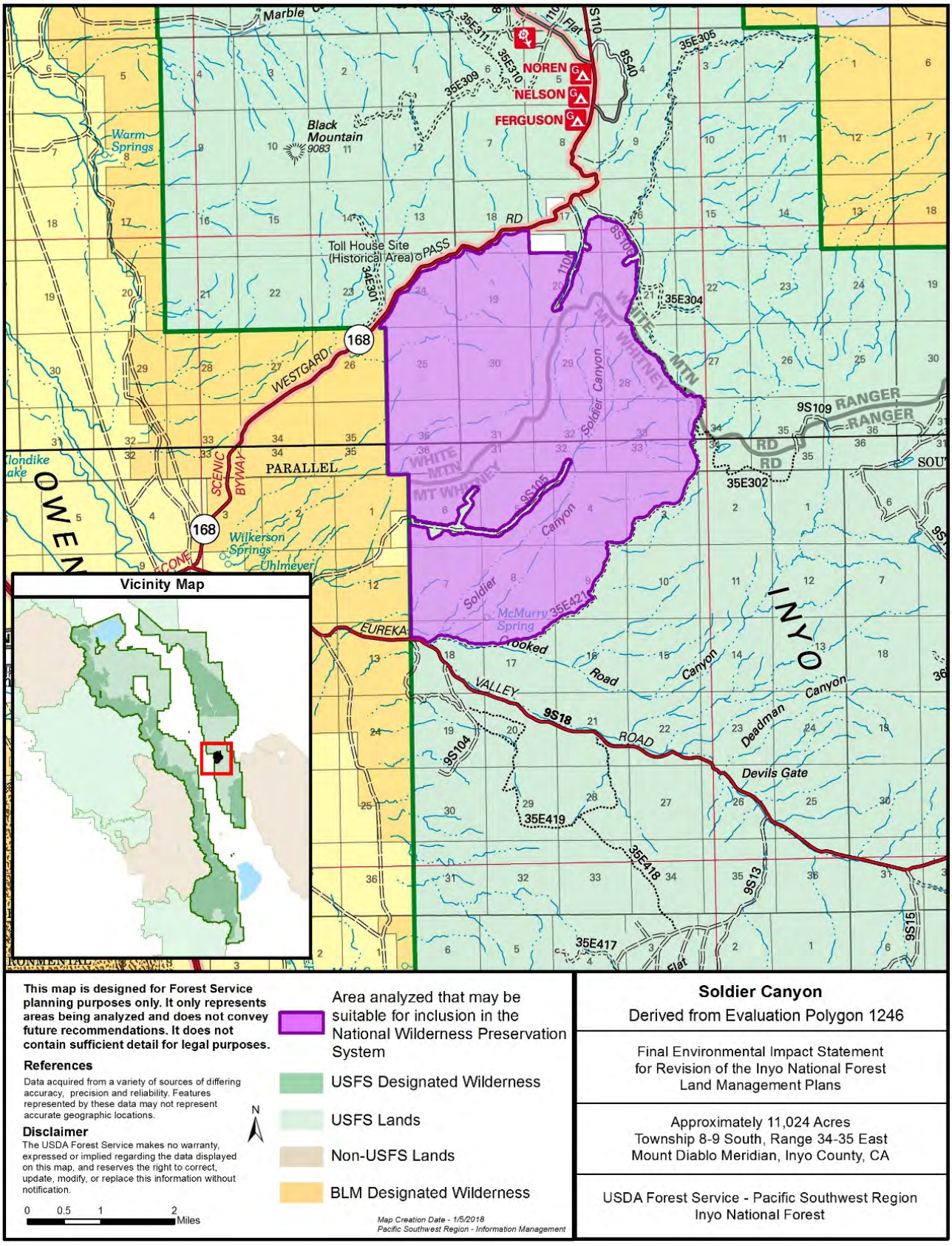


Figure B-30. Map of Soldier Canyon area analyzed as recommended wilderness in alternative C

South Huntoon Creek

This recommendation was derived from Wilderness Evaluation Polygon 1357.

Number of Acres

The area is approximately 5,898 acres.

Location and Description of Recommended Boundary

The boundary can be seen on the South Huntoon Creek map (Figure B-31). The boundary follows National Forest System roads, making it fairly easy to locate on the map and on the ground. The surrounding area is managed by the Forest Service. The northern boundary is formed by forest road 03N14. Western boundary follows forest roads 02N109A and 02N109. The southern and western boundary are formed by forest road 03N11.

General Geography, Topography and Vegetation

This area is located in the Excelsior Mountains, north of Adobe Hills. Ecosystem types include pinyon-juniper, sagebrush and xeric shrublands and blackbrush. The topography is characterized by low rolling hills mostly comprised of pinyon woodland and shrublands. The elevation ranges from 7,000 to 7,500 feet.

Current Uses

Currently, the area has low recreation use due to remoteness of the area and limited water. The majority of the polygon is managed as inventoried roadless areas. The area southeastern portion of the polygon occurs within the Montgomery Wild Horse Management Area; future potential management activities include fencing, corrals, and helicopter use.

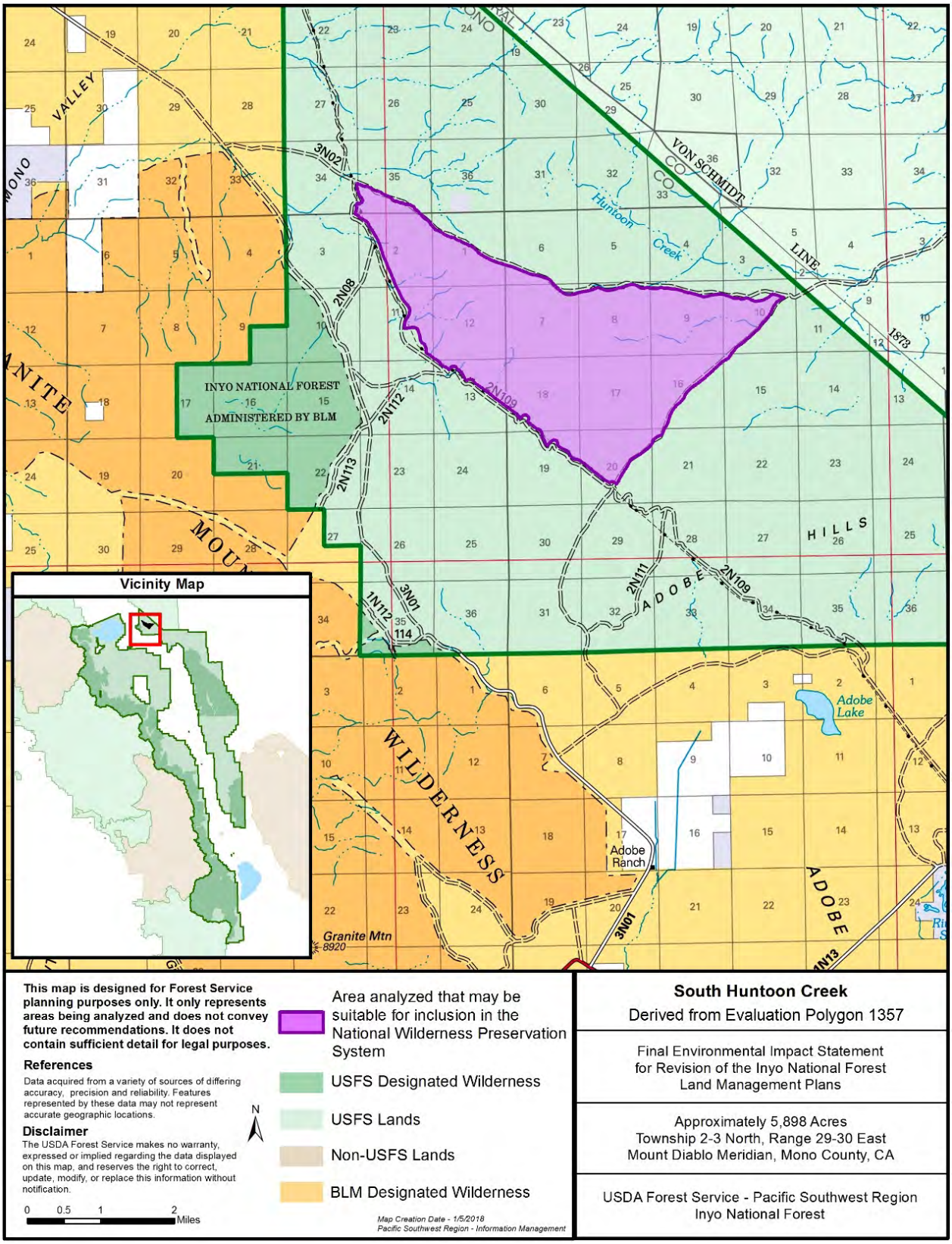
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

This area has high ecological integrity with few alterations to natural conditions. There are dry alkali lakes which are a unique ecosystem type to the Inyo National Forest. A power line corridor is visible from some of the area due to minimal topographic relief. Visitors would also be able to hear traffic from the roads. The interior of the polygon is within one mile of roads, which surround the polygon on all sides. There is a high opportunity to engage in primitive and unconfined recreation activities, including cross-country hiking, hunting, wild horse viewing and general forest exploration. Recreation opportunities may be limited by the lack of available water. Managing the polygon to preserve its wilderness characteristics would be affected by overlap with the Montgomery Wild Horse Management Area, which may require management activities inconsistent with wilderness.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Good opportunities for primitive and unconfined recreation.


Vicinity Map
INYO NATIONAL FOREST
ADMINISTERED BY BLM
WILDERNESS
Huntoon Creek
VON SCHMIDT LINE
Adobe Lake
Adobe Ranch
Granite Mtn
8920
3N02
2N08
2N112
2N113
2N109
2N111
3N01
1N112
114
1873
This map is designed for Forest Service planning purposes only. It only represents areas being analyzed and does not convey future recommendations. It does not contain sufficient detail for legal purposes.
References
Data acquired from a variety of sources of differing accuracy, precision and reliability. Features represented by these data may not represent accurate geographic locations.
Disclaimer
The USDA Forest Service makes no warranty, expressed or implied regarding the data displayed on this map, and reserves the right to correct, update, modify, or replace this information without notification.
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N
Area analyzed that may be suitable for inclusion in the National Wilderness Preservation System
USFS Designated Wilderness
USFS Lands
Non-USFS Lands
BLM Designated Wilderness
Map Creation Date - 1/5/2018
Pacific Southwest Region - Information Management
South Huntoon Creek
Derived from Evaluation Polygon 1357
Final Environmental Impact Statement for Revision of the Inyo National Forest Land Management Plans
Approximately 5,898 Acres
Township 2-3 North, Range 29-30 East
Mount Diablo Meridian, Mono County, CA
USDA Forest Service - Pacific Southwest Region
Inyo National Forest

Figure B-31. Map of South Huntoon Creek area analyzed as recommended wilderness in alternative C

South Sierra Wilderness Addition – East (1)

This recommendation was derived from Wilderness Evaluation Polygon 1391. There are two different boundaries for this area, one for alternative C and one for alternative B.

Number of Acres

The area for alternative C is approximately 25,469 acres. The area for alternative B is approximately 17,622.

Location and Description of Recommended Boundary

The boundary can be seen on the South Sierra Wilderness Addition – East map (Figure B-32). In alternative C, the boundary follows the original boundary of the parent evaluation polygon. The area is contiguous with the South Sierra Wilderness along the entire length of its western border. The remaining boundary follows the forest administrative boundary and roads, making it fairly easy to locate on the map and on the ground. The southern boundary is adjacent to the Sacatar Trail Wilderness, which is administered by the Bureau of Land Management. The surrounding area is mostly managed by the Forest Service or Bureau of Land Management with some adjacent private property.

In alternative B, the boundary was reshaped to exclude the northern portion around and north of Sage Flat and southwestern portion west of Long Canyon. The boundary follows natural features in these areas. The southwestern boundary follows a prominent ridge, which is easily locatable on a map or on the ground. The location of the boundary is intended to minimize the potential for incursions by motorized vehicles. There are several unauthorized routes in these areas. The southern boundary change allows for vegetation management needed around the Kennedy Meadows community.

General Geography, Topography and Vegetation

The South Sierra Addition is located along the eastern escarpment the Sierra Nevada Mountains. Elevations range from 9,300 feet along the western boundary, to 4,300 feet along the eastern boundary. The area is characterized by steep slopes and forested canyons that descend to alluvial fans in the Mojave Desert. Haiwee Canyon, which contains a perennial stream, is the predominant drainage. Several other canyons along the escarpment contain streams that have perennial flows for some of their length. Ecosystem types include Jeffrey pine, mountain mahogany, pinyon-juniper, sagebrush, white fir and xeric shrublands and blackbrush. The topography is characterized as Eastern Sierra escarpment with steep slopes and forested canyons. This area contains largely intact true Mojave Desert ecosystems; vegetation includes Joshua trees, cholla cactus, creosote, and canyon live oak.

Current Uses

The majority of this area is managed as inventoried roadless area. Livestock grazing occurs in the area with no known range improvements associated with the allotments. The area receives low amounts of recreation use including backpacking, day-hiking and hunting. The lower section of Haiwee Canyon Trail, the only forest system trail in the area, has been heavily damaged by flash floods in recent years. There are several improvements in the area related to water supply.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

The area has high ecological integrity, and generally appears to reflect ecological conditions that would normally be associated with the area without human intervention. Several invasive species

are present in the area. There are several improvements in the area that represents a departure from apparent naturalness. The area provides good opportunities for solitude and primitive and unconfined recreation. The steep terrain and lack of trails throughout most of the area support a remote experience away from the sights and sounds of people inside the wilderness. The sense of remoteness may be diminished along the area's eastern periphery by U.S. Highway 395. This area's other features of value include the Mojave Desert and oak woodlands with high ecological integrity. There are unauthorized routes in the area, which are expected to return to natural conditions through passive restoration processes.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of Alternatives B and C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Good opportunities for solitude and primitive and unconfined recreation.
- Opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System.
- The area is contiguous with existing designated wildernesses.

South Sierra Wilderness Addition – East (2)

This recommendation was derived from Wilderness Evaluation Polygon 1391.

Number of Acres

The area is approximately 1,514.

Location and Description of Recommended Boundary

The boundary can be seen on the South Sierra Wilderness Addition – East map (Figure B-32). The area connects with the South Sierra Wilderness at its southeast corner. The boundary follows National Forest Systems roads and motorized trails and the forest's administrative boundary, making it fairly easy to locate on the map and on the ground. The surrounding area is managed by the Forest Service.

General Geography, Topography and Vegetation

This area is located between Monache Mountain to the west and Deer Island to the east. Ecosystem types include red fir, sagebrush, subalpine forest and white fir. The topography includes gentle to moderate slopes. The elevation ranges from 4,500 to 9,400 feet. The South Fork of the Kern River, a designated Wild and Scenic River, is located in the eastern boundary of this polygon.

Current Uses

Grazing and range improvements occur in the Monache area and there has been some headcut and stream improvement work. Several cultural resources are in the area. Current primitive recreation activities in this area include hiking, backpacking, horseback riding and fishing.

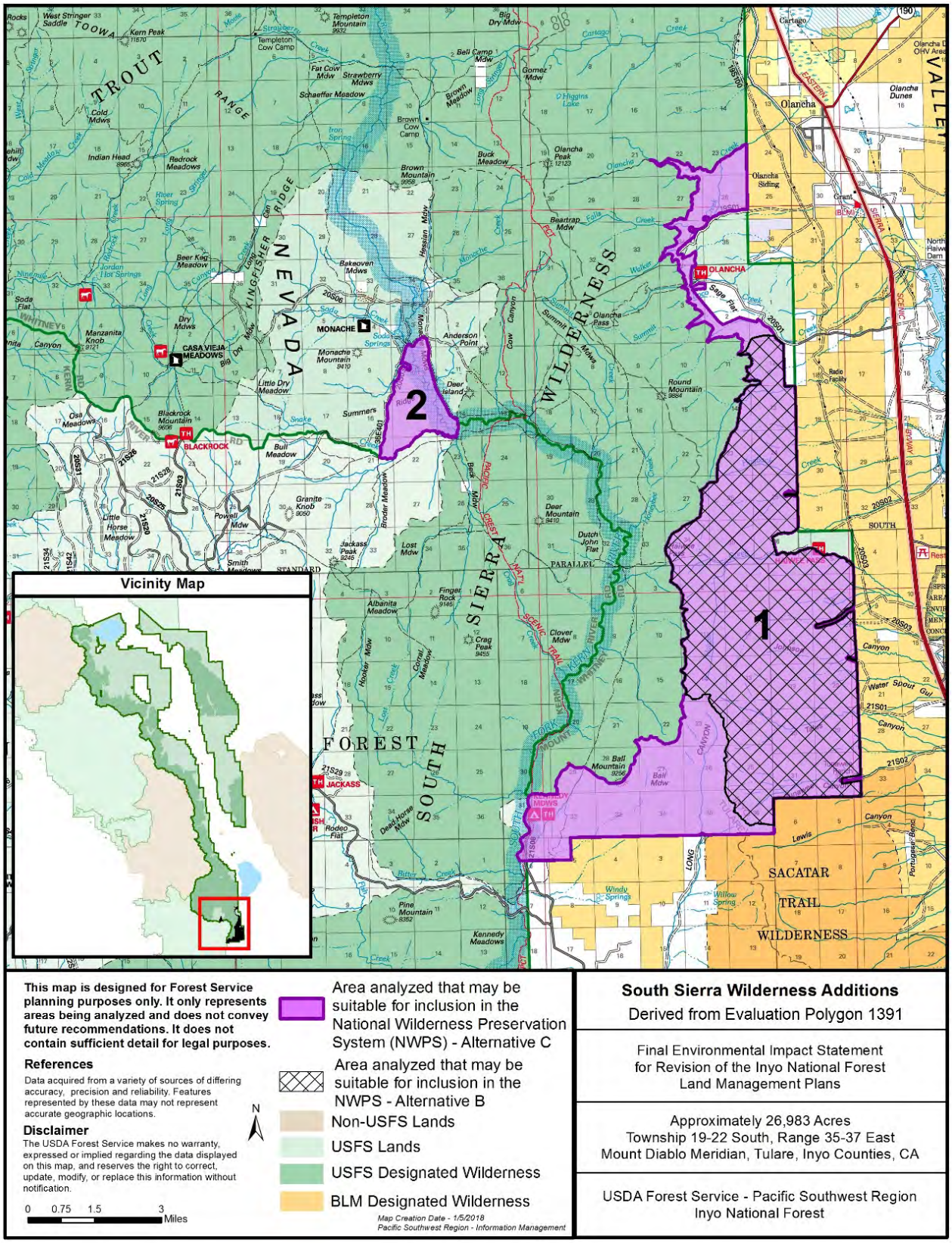
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

The area has moderate ecological integrity. The area moderately reflects conditions that would normally be associated with an area absent of human intervention. The potential for encounters with other visitors is medium to high due to the small size of this polygon and the short distance between the two authorized roads adjacent to this polygon (1.5 miles). Motorized recreation just outside the area may impact opportunities for solitude. There may be opportunities for primitive and unconfined recreation.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Opportunities for primitive and unconfined recreation.


Vicinity Map
1
2
TROUT
RANGE
NEVADA
WILDERNESS
SOUTH SIERRA
FOREST
SACATAR
TRAIL
WILDERNESS
OLANCHA
MONACHE
BLACKROCK
JACKASS
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N
Area analyzed that may be suitable for inclusion in the National Wilderness Preservation System (NWPS) - Alternative C
Area analyzed that may be suitable for inclusion in the NWPS - Alternative B
Non-USFS Lands
USFS Lands
USFS Designated Wilderness
BLM Designated Wilderness
Map Creation Date - 1/5/2018
Pacific Southwest Region - Information Management
South Sierra Wilderness Additions
Derived from Evaluation Polygon 1391
Final Environmental Impact Statement
for Revision of the Inyo National Forest
Land Management Plans
Approximately 26,983 Acres
Township 19-22 South, Range 35-37 East
Mount Diablo Meridian, Tulare, Inyo Counties, CA
USDA Forest Service - Pacific Southwest Region
Inyo National Forest

Figure B-32. Map of South Sierra Wilderness Additions – East (1) and East (2) areas analyzed as recommended wilderness in alternatives B and C

White Mountains Wilderness Additions (West)

This recommendation was derived from Wilderness Evaluation Polygon 1281. There are two different boundaries for this area, one for alternative C and one for alternative B.

Number of Acres

The area for alternative C is approximately 8,630 acres. The area for alternative B is approximately 5,062.

Location and Description of Recommended Boundary

The boundary can be seen on the White Mountains Wilderness Additions map (Figure B-33). In alternative C, the boundary follows the original boundary of the parent evaluation polygon. The northern portion of the area is contiguous with the White Mountain Wilderness. The remaining boundary generally follows National Forest System roads and motorized trails, making it fairly easy to locate on the map and on the ground. All adjacent lands are managed by the Forest Service. The boundary excludes motorized trails that intersect the middle of the original parent polygon, supporting management of the area for wilderness, as well as other adjacent uses.

In alternative B, the boundaries not contiguous with the White Mountain Wilderness are refined to make them more clearly identifiable and to use setbacks from roads and motorized trails that were consistent with other wilderness boundary setbacks on the forest. The eastern boundary uses the 9,000 feet contour interval, which visitors could locate on a map or with the use of GPS. The southern, eastern, and portions of the western boundaries follows a stream channel, which visitors could locate on a map and on the ground. The remainder of the western boundary is offset from Wyman County Road or a utility corridor adjacent to White Mountain Road.

General Geography, Topography and Vegetation

This area is located in the high elevations of the southern White Mountains. Elevations range from 9,000 feet along the southern and eastern boundaries, to 11,000 feet along the northern boundary near Blanco Mountain, a soaring pyramid-shaped mountain underlain by dolomite. Water Canyon and Mill Canyon, which contain perennial streams, are the predominant drainages in the potential recommended area. Vegetation communities in the area include mountain mahogany, pinyon juniper forests, sagebrush shrub and subalpine forest types. The majority of the recommended area is within the Ancient Bristlecone Pine Forest, and bristlecone pines are scattered across the south facing slopes of Blanco Mountain. Priority sage-grouse habitat occurs in the western portion of both polygons; however, the alternative B polygon boundary was adjusted to provide for potential habitat improvement projects in the sage-grouse habitat lower than 9,000 feet.

Current Uses

The majority of this area is managed as inventoried roadless area. Livestock grazing occurs in this area; there is no known range improvement associated with the allotments in the area. The area receives low amounts of recreation use that includes day-hiking and hunting. Overnight camping is prohibited in the Ancient Bristlecone Pine Forest. There are forest system trails that are also used as stock trails in the Water Canyon and Mill Canyon drainages. There is one private inholding in the area, an approximately 40-acre parcel on the south slope of Blanco Mountain. There is no known existing road access to the inholding.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

This area has good ecological integrity and generally appears to reflect ecological conditions that would normally be associated with the area without human intervention. There are no known invasive plant species in the area. The area provides good opportunities for solitude and primitive and unconfined recreation. There are two unmaintained forest system trails in the area, both of which are in small canyons. The steep terrain and unmaintained trails support a remote experience away from the sights and sounds of people inside the wilderness. The sense of remoteness may be diminished along the area's eastern periphery by motorized vehicle use on Wyman Road, White Mountain Road, or the utility corridor. This area's other features of value includes ecological features of the Ancient Bristlecone Pine Forest that are of scientific and educational value.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of Alternatives B and C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Good opportunities for solitude and primitive and unconfined recreation.
- The area is contiguous with existing designated wilderness.
- The area contains ecological features in the Ancient Bristlecone Pine Forest that are of scientific and educational value.

White Mountains Wilderness Additions (East)

This recommendation was derived from Wilderness Evaluation Polygon 1281. There are two different boundaries for this area, one for alternative C and one for alternative B.

Number of Acres

The area for alternative C is approximately 3,288 acres. The area for alternative B is approximately 2,505.

Location and Description of Recommended Boundary

The boundary can be seen on the White Mountains Wilderness Additions map (Figure B-33). In alternative C, the boundary follows the original boundary of the parent evaluation polygon. The northern portion of the area is contiguous with the White Mountain Wilderness. The remaining boundary generally follows motorized trails and the forest administrative boundary, making it fairly easy to locate on the map and on the ground. However, the southern boundary is a straight line that would be difficult to locate on the ground. All adjacent lands are managed by the Forest Service or the Bureau of Land Management. The boundary excludes motorized trails that intersect the middle of the original parent polygon, supporting management of the area for wilderness, as well as other adjacent uses.

In alternative B, the western and eastern boundaries are refined to make them more clearly identifiable and to use setbacks from roads and motorized trails that were consistent with other wilderness boundary setbacks on the forest. The southern boundary uses a prominent ridgeline, which visitors could locate on a map or on the ground. The western boundary uses an offset from

the Dead Horse Meadow Motorized Trail and one of its spurs, which visitors could locate on a map and on the ground.

General Geography, Topography and Vegetation

This area is located on the southeastern slopes of the White Mountains. The majority of the area is within the south rim of the Cottonwood Creek watershed, with Black Birch Canyon the most notable geographic feature. The Cottonwood Creek wild and scenic river corridor overlays the extreme northeast corner of the potential recommended area. Elevations range from 8,500 feet along the southern boundary, to 6,800 feet along Cottonwood Creek. Vegetation communities in the area include pinyon juniper forest.

Current Uses

The entire area is managed as inventoried roadless area. Livestock grazing occurs in the area, with no permanent range improvements associated with the allotments. The area receives low amounts of recreation use that likely includes hiking and hunting.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

This area has good ecological integrity, and generally appears to reflect ecological conditions that would normally be associated with the area without human intervention. There are no known invasive plant species in the area. The area provides good opportunities for solitude and primitive and unconfined recreation. Portions of the Cottonwood Creek stock trail may be evident through the area, but there are no other known trails. The steep terrain and absence of trails support a remote experience away from the sights and sounds of people inside the wilderness. The sense of remoteness may be diminished along the area's periphery by motorized vehicle use along the western boundary. The area is generally distant from occupied and modified areas. This area's other features of value include the pinyon-juniper woodlands with high ecological integrity.

Summary of Factors Considered in the Selection of this Area

The Inyo National Forest considered the following factors in selecting this area as part of Alternatives B and C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- The intact condition of the ecosystem types.
- Good opportunities for solitude and primitive and unconfined recreation.
- The area is contiguous with existing designated wilderness and contains a wild and scenic river.
- Opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System.

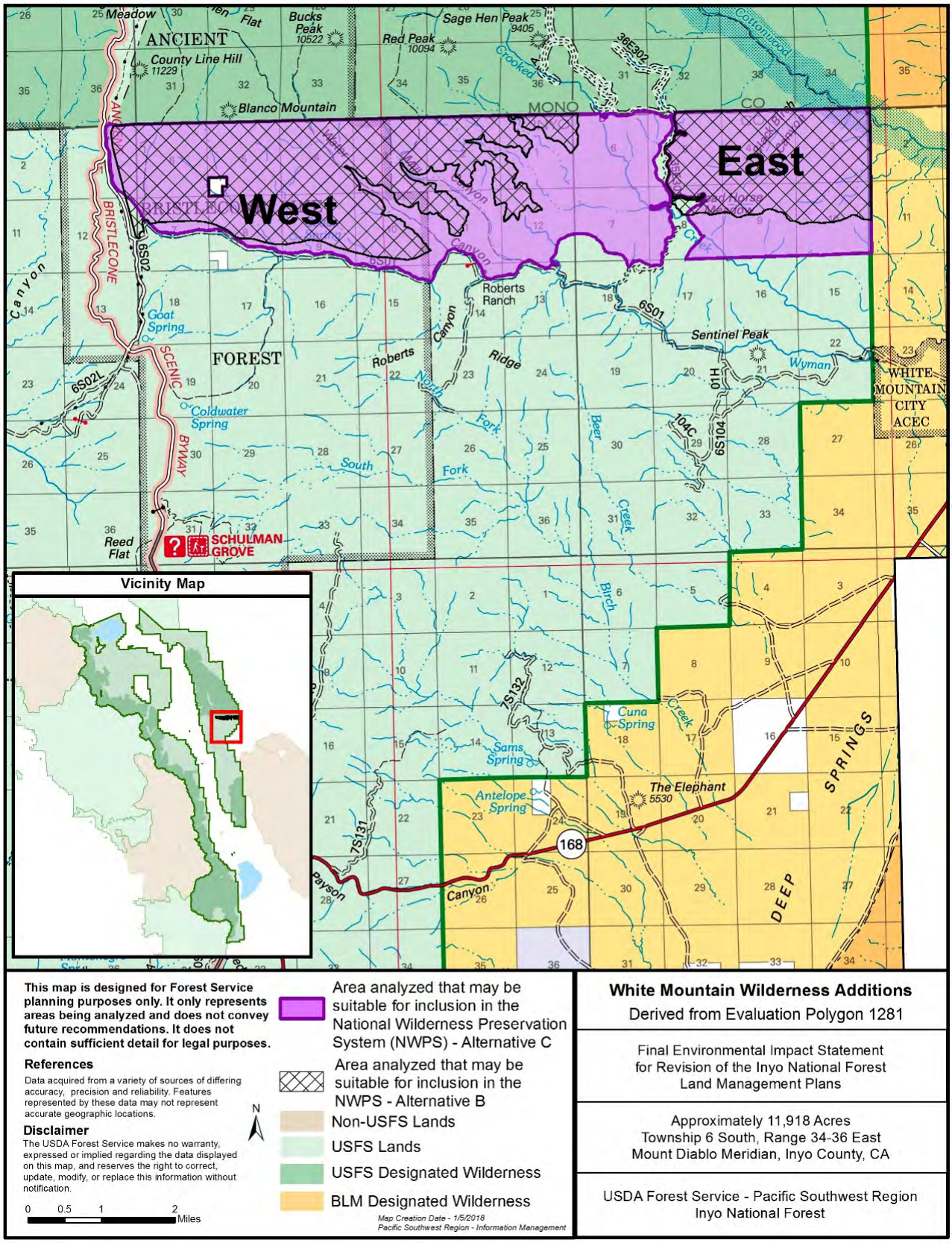

Figure B-33. Map of White Mountains Wilderness Additions areas analyzed as recommended wilderness in alternatives B and C

Rationale for Areas Not Analyzed as Recommended Wilderness in the Environmental Impact Statement

The following table provides rationale to support the decision not to analyze a polygon, or portion of a polygon, as an area that may be suitable for recommendation and inclusion in the National Wilderness Preservation System.

Table B-1. Inyo National Forest wilderness evaluation polygons or subpolygons not analyzed for recommended wilderness

Evaluation Polygon Identification Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale supporting that polygons or subpolygons are not potentially suitable for inclusion in The National Wilderness Preservation System
944	Watterson Canyon (7,629)	7,629	The opportunities for solitude or primitive and unconfined recreation are limited in this polygon due to an authorized motorized trail (Travel Management Record of Decision) that bisects the polygon, north to south, and the high road density surrounding the polygon, including a state highway along the south, west and east borders, and an extensive network of authorized forest system roads. Sights and sound from the motorized trails and roads penetrate into most of the polygon. Appearance of naturalness is affected along the northern boundary by a powerline.
995	Kelty Canyon (5,806)	5,806	The opportunities for solitude or primitive and unconfined recreation are limited in this polygon due to paved road along the eastern boundary and the extensive network of authorized forest system roads and motorized trails (Travel Management Record of Decision) around the perimeter of the polygon. Sights and sound from roadways and motorized trail penetrates into much of the polygon.
1012	Glass Mountains (40,368)	5,777	Opportunities for solitude or primitive and unconfined recreation are limited in these small subpolygons due to the existence of authorized motorized trails in the units. Sights and sound from motorized trails and the surrounding extensive network of authorized forest system roads penetrate these small subpolygons.
1039	Black Mountain and Sawmill Canyon (11,026)	11,026	Although there are some opportunities for solitude or primitive and unconfined recreation in the interior, opportunities for solitude or primitive and unconfined recreation are limited in other portions of this polygon due to an extensive network of authorized forest system roads and authorized motorized trails in a large portion of the perimeter. This includes many authorized forest system roads that cherry stem to partially divide the polygon into many small sections. Sights and sound from roadways and motorized trails penetrate into those areas of the polygon. There is some private property within the polygon.
1068	Dexter Canyon (12,311)	3,637	Opportunities for solitude or primitive and unconfined recreation are limited in this small subpolygon due to the existence of an authorized motorized trail that bisects it from the parent polygon. Sights and sound from motorized trails and surrounding authorized forest system roads penetrate these small subpolygons.

Evaluation Polygon Identification Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale supporting that polygons or subpolygons are not potentially suitable for inclusion in The National Wilderness Preservation System
1072	Mono Craters (7,574)	7,574	Opportunities for solitude or primitive and unconfined recreation are limited throughout much of this polygon due to an extensive network of authorized forest system roads, including a few authorized forest system roads that cherry stem to partially divide the polygon into smaller sections. There are limited opportunities for solitude or primitive and unconfined recreation along the southern boundary due to proximity to a commercial pumice mine. Sights and sound from roadways and the pumice mine penetrate into those areas of the polygon.
1080	Anderson Point (1,137)	1,137	Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads bordering and cherry stemming to shape this small polygon. This is a very popular dispersed camping area. Sights and sounds from the roads would likely penetrate most of this small polygon.
1081	Bakeoven Meadows (5,413)	5,413	Opportunities for solitude or primitive and unconfined recreation are limited along an extensive network of authorized forest system roads bordering and cherry stemming to shape this polygon. Sights and sounds from the roads would likely penetrate a large portion of this relatively small polygon.
1092	Slide Canyon (4,252)	4,252	Opportunities for solitude or primitive and unconfined recreation are limited due to paved roads along the north and south boundaries, especially where Horseshoe Meadow Road nearly divides the northeastern portion from the rest of the polygon. Sights and sounds from the roads would likely penetrate a large portion of this relatively small polygon. There is a hydroelectric power plant adjacent to the southeastern boundary, which degrades the appearance of naturalness and limits opportunities for solitude or primitive and unconfined recreation.
1098	Escarpment from George Creek to Hogback Creek (1,476)	1,476	Opportunities for solitude or primitive and unconfined recreation are limited in this small polygon due to an existing authorized motorized trail within the northern portion of the polygon, and to an authorized forest system road that cherry stems the southern portion of the polygon. Sights and sounds from the roads would likely penetrate most of this small polygon.
1099	Escarpment - Shephard Creek (1,092)	1,092	Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads around the perimeter and cherry stemming into this polygon; sights and sounds from the roads would likely penetrate most of this small polygon.

Evaluation Polygon Identification Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale supporting that polygons or subpolygons are not potentially suitable for inclusion in The National Wilderness Preservation System
1106	Escarpment - Onion Valley South (1,408)	1,408	This polygon is sort of crescent shaped to follow the perimeter of the John Muir Wilderness south of Onion Valley. Opportunities for solitude or primitive and unconfined recreation are limited due to the heavily traveled Onion Valley Road along the northern perimeter, and an extensive network of authorized forest system roads along most of the southern perimeter, some that cherry stem into the polygon area. The area has high recreation use, including recreation residences, campground and trailheads. Sights and sounds from the roads and recreation activity would likely penetrate most of this small polygon, especially in the northern portion.
1108	Escarpment - Onion Valley North (2,100)	2,100	Opportunities for solitude or primitive and unconfined recreation are limited due to the heavily traveled Onion Valley Road along the southern perimeter, another paved road along the northern perimeter, and an extensive network of authorized forest system roads to the east and south. Sights and sounds from the roads would likely penetrate most of this small polygon.
1109	Escarpment - Oak Creek (1,318)	1,318	Opportunities for solitude or primitive and unconfined recreation are limited due to the heavily traveled paved road along the southern boundary, another paved road along the north, and an extensive network of authorized forest system roads to the east and north. Sights and sounds from the roads would likely penetrate most of this small polygon. The appearance of naturalness is impacted by post-fire flooding of Oak Creek, and opportunities for solitude or primitive and unconfined recreation may be affected in areas currently authorized for active restoration treatments involving motorized tools.
1110	Escarpment between Sawmill Creek and Baxter Pass Trailhead (1,650)	1,650	Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads bordering or cherry stemming the polygon. One road nearly bisects the polygon. Sights and sounds from the roads would likely penetrate most of this small polygon.
1112	Escarpment between Goodale Creek and Sawmill Creek (4,949)	4,949	Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads and authorized motorized trails. The polygon is bisected by a forest system road that is maintained by the County; a hydroelectric powerhouse is along this road. Sights and sounds from the roads would likely penetrate most of this small polygon.
1115	Escarpment - Tinemaha Creek (3,485)	3,485	Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized motorized trails within the polygon and an authorized forest system road in the perimeter. Their sights and sounds would likely penetrate this small polygon.
1116	Escarpment - McMurry Meadow (2,437)	2,437	Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized motorized trails within the polygon and authorized forest system roads along the perimeter; sights and sounds would likely penetrate this small polygon.

Evaluation Polygon Identification Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale supporting that polygons or subpolygons are not potentially suitable for inclusion in The National Wilderness Preservation System
1140	Coyote (75,299)	75,299	Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized motorized trails within the center polygon; three large authorized forest system roads cherry stem the borders of the polygon in the northern, southern and eastern portions; a high use paved road along the western boundary. The sights and sounds from the authorized motorized trails, forest system roads and paved road likely penetrate much of the polygon.
1147	Pine Creek East (1,351)	1,351	Opportunities for solitude or primitive and unconfined recreation are limited due to a paved road along the eastern boundary, and an authorized forest system road and private land road to the south and west of this small polygon. There is substantial departure from appearance of naturalness due to mining activity that is visible from approximately 50 percent of the area, including a patented tungsten mine located to the south and west; with highly visible and intrusive human materials in and adjacent to the polygon, including several buildings, a road network, culvert pipes and equipment, some of which may need costly rehabilitation.
1148	Pine Creek West (1,756)	1,756	There is substantial departure from appearance of naturalness due to mining activity that is visible from approximately 50 percent of this small polygon, including a patented tungsten mine located to the north and east. The sites have highly visible and intrusive human materials in and adjacent to the small polygon, including several buildings, a road network, culvert pipes and equipment, some of which may need costly rehabilitation. The opportunity for solitude or primitive and unconfined recreation is limited due to proximity to roads, Pine Creek Mine and a four wheel drive trail that provides access to patented mining claims (private land) in this small polygon.
1154	Rock Creek East and Sand Canyon (5,243)	5,243	Opportunities for solitude or primitive and unconfined recreation are limited due to the presence of authorized motorized trails within the polygon, and a paved road with highly developed recreation sites along the western perimeter; sights and sounds would likely penetrate this small polygon. There is a small hydropower development operating under an existing special use permit that includes use of motorized tools and motorized access.
1155	Rock Creek West (3,498)	3,498	Opportunities for solitude or primitive and unconfined recreation are limited due to a paved road along the eastern and northern borders with highly developed recreation areas; sights and sounds would likely penetrate this small elongated polygon.

Evaluation Polygon Identification Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale supporting that polygons or subpolygons are not potentially suitable for inclusion in The National Wilderness Preservation System
1156	McGee Creek (5,129)	5,129	Opportunities for solitude or primitive and unconfined recreation are limited due to US Highway 395, Crowley Lake residential community, an extensive network of authorized forest system roads and highly developed recreation facilities along the perimeter of this polygon; some authorized forest system roads nearly bisect the polygon. Their sight and sounds would likely penetrate most of the polygon. Currently, there are authorized fuels management activities and a heli-ski competition within this polygon, authorized under special use permit.
1159	Mammoth Escarpment-Lakes Basin, Sherwin Creek, Laurel Creek and Convict Lake (14,833)	14,833	Opportunities for solitude or primitive and unconfined recreation are limited: due to an extensive network of authorized motorized trails within the polygon, including those that split the polygon; due to the many authorized forest system roads that cherry stem to nearly split other sections of this polygon; and areas adjacent to highly developed recreation areas, recreation residences, and developed communities. Sights and sounds from roads and highly developed recreation areas would likely penetrate a large portion of the polygon.
1161	Reds Meadow (1,656)	1,656	Opportunities for solitude or primitive and unconfined recreation are limited due to a high use paved road and highly developed recreation sites along the perimeter; sights and sounds would likely penetrate most of this small polygon. Mechanical fuels management activities may need to continue within the polygon to protect adjacent high value areas.
1164	Minaret Vista and San Joaquin Four Wheel Drive Trail (1,017)	1,017	Opportunities for solitude or primitive and unconfined recreation are limited due to an authorized motorized trail within the polygon, and the concentrated recreation area, paved road and authorized forest system road along the southern boundary. Sight and sounds from all uses may penetrate most of the small polygon.
1195	West of Mono Lake and Highway 395, North of Lee Vining (2,008)	2,008	Opportunities for solitude or primitive and unconfined recreation are limited due to proximity to US Highway 395. Sight and sounds may penetrate most of the small polygon. The area is an avalanche control zone for Cal Trans to address safety concerns along the highway.
1208	Saddlebag Lake (2,516)	2,516	Opportunities for solitude or primitive and unconfined recreation are limited due to state highway 120, highly developed authorized recreation sites and Saddlebag Lake dam. Sight and sounds may penetrate most of the small polygon.
1211	Lundy Canyon (1,949)	1,949	Opportunities for solitude or primitive and unconfined recreation are limited due to proximity to a paved access road in the southern boundary, and to a highly concentrated, authorized recreation use area. The sight and sounds would likely penetrate most of the polygon.

Evaluation Polygon Identification Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale supporting that polygons or subpolygons are not potentially suitable for inclusion in The National Wilderness Preservation System
1232	Willow Springs (3,205)	3,205	Opportunities for solitude or primitive and unconfined recreation are limited due to the Betty Jumbo Mine Road, a highly visible motorized trail along the entire eastern boundary. There are authorized forest system roads that cherry stem into a portion of the western boundary area. Sight and sounds of motorized use would likely penetrate most of this small polygon.
1236	West of Inyo Mountains Wilderness (73,128)	24,829	There are several subpolygons not recommended due to limited opportunities for solitude or primitive and unconfined recreation because there are authorized motorized trails within the subpolygons; sight and sounds would likely penetrate much of the subpolygons.
1246	North of Eureka Valley Road (43,231)	7,092	There are several small subpolygons not recommended due to limited opportunities for solitude or primitive and unconfined recreation because of authorized motorized trails within the subpolygons; sight and sounds would likely penetrate much of these small subpolygons.
1248	Redding Canyon, Black Canyon (38,756)	7,003	Opportunities for solitude or primitive and unconfined recreation are limited in these subpolygons due to extensive network of authorized roads motorized trails; sight and sounds would likely penetrate much of the subpolygons.
1258	Ancient Bristlecone Pine Forest and Wyman Canyon South (35,248)	1,084	This subpolygon is not recommended as wilderness due to limited opportunities for solitude or primitive and unconfined recreation because of an extensive network of authorized motorized trails. The sight and sounds would likely penetrate much of the subpolygon.
1275	North of Silver Canyon (10,435)	10,435	Opportunities for solitude or primitive and unconfined recreation are limited due to authorized motorized trails in the western portion, and an extensive network of authorized forest system roads that cherry stem to form the perimeter of the polygon; sight and sounds would likely penetrate much of the polygon.
1276	Gunter Canyon (1,048)	1,048	Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads that cherry stem the boundary of this small polygon; sight and sounds would likely penetrate much of the polygon.
1281	Ancient Bristlecone Pine Forest and Dead Horse Meadow (11,210)	881	There are limited opportunities for solitude or primitive and unconfined recreation due to authorized motorized trails within these subpolygons. One of the subpolygons is adjacent to White Mt road (FR 4S01), a high use and speed road. The sight and sounds of motorized trails and high speed road would likely penetrate much of the small polygon.
1295	White Mountain Road, Barcroft Research Station (2,265)	2,265	Opportunities for solitude or primitive and unconfined recreation are limited due to proximity to White Mountain Rd; sight and sounds would likely penetrate much of the polygon. There is likely a need for motorized access to maintain a powerline that runs through middle of this polygon.

Evaluation Polygon Identification Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale supporting that polygons or subpolygons are not potentially suitable for inclusion in The National Wilderness Preservation System
1297	North of Jeffrey Mine (1,092)	1,092	Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads along the perimeter, several cherry stem to form the boundary of this polygon. The sight and sounds would likely penetrate much of this small polygon. Motorized access may be needed to maintain an existing water system that carries irrigation water to Chalfant Valley.
1301	Leidy Creek South (3,010)	3,010	Opportunities for solitude or primitive and unconfined recreation are limited at the northern boundary along an authorized forest system road. The sight and sounds would likely penetrate much of this small polygon.
1311	Chiatovich Creek (11,214)	11,214	Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads around the perimeter of the polygon. There is a portion of authorized motorized trails in the polygon. Private land developments, authorized forest system roads and motorized trails in the eastern portion nearly bisect the polygon. Sight and sounds would likely penetrate these portions of the polygon.
1312	Boundary Peak (8,133)	8,133	Opportunities for solitude or primitive and unconfined recreation are limited in some areas due to an extensive network of authorized forest system roads around the perimeter of the polygon. There are two areas with authorized motorized trails in the polygon. Sight and sounds would likely penetrate these portions of the polygon.
1326	Queen Valley (5,464)	5,464	Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads around the perimeter; their sight and sounds would likely penetrate the eastern portion of the polygon.
1332	Pizona South, Northwest of Highway 6 (5,244)	5,244	Opportunities for solitude or primitive and unconfined recreation are limited due to Highway 6 and an extensive network of authorized forest system roads along the boundary; their sight and sounds would likely penetrate most of the polygon. The appearance of naturalness is substantially affected in areas by historic mining activities and pinyon pine removal by chaining.
1339	Pizona-Truman Meadows (19,826)	64	Opportunities for solitude or primitive and unconfined recreation are limited due to an authorized motorized trail within this very small subpolygon; sight and sounds would penetrate throughout the unit.
1342	Montgomery Pass (6,144)	6,144	Opportunities for solitude or primitive and unconfined recreation are limited due to an authorized motorized trail within the polygon, and Highway 6 and an extensive network of authorized forest system roads around the perimeter; sight and sounds would likely penetrate most of the polygon.

Evaluation Polygon Identification Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale supporting that polygons or subpolygons are not potentially suitable for inclusion in The National Wilderness Preservation System
1376	Watterson Meadow and Benton Range (9,922)	9,922	Opportunities for solitude or primitive and unconfined recreation are limited due to authorized motorized trails within the polygon, and a paved road and an extensive network of authorized forest system roads along the perimeter. A few forest system roads are cherry stemmed to form the boundary. Sight and sounds would likely penetrate large portions of the polygon.
1391*	Monache, Blackrock, and South Sierra East (33,247)	620 (Note: this number represents acreage on both the Sequoia and Sierra National Forests)	These subpolygons are located on both the Inyo and Sequoia National Forests. Opportunities for solitude or primitive and unconfined recreation are limited in these subpolygons due to authorized motorized trails within the boundaries of these subpolygons; sights and sounds would likely penetrate throughout the areas.
1550	McBride Flat (12,198)	1,737	Opportunities for solitude or primitive and unconfined recreation are limited in these subpolygons due to authorized motorized trails within the boundaries of these subpolygons; sights and sounds would likely penetrate throughout the areas.

1. Evaluation Polygon 1391 overlays the boundary between the Inyo and Sequoia National Forests with portions in each forest. The figures here represent just the areas not analyzed from the Inyo National Forest.

Recommendation

Based on the analysis in the environmental impact statement and public input received, the Forest Supervisor will make a decision on specific areas to recommend for inclusion in the National Wilderness Preservation System. The decision will be included in the final decision document for the forest plan as a preliminary administrative recommendation. Plan components will provide direction for managing areas recommended for wilderness designation. The areas must be managed to protect and maintain the ecological and social characteristics that provide the basis for their suitability for wilderness recommendation.

Appendix C – Wild and Scenic Rivers Evaluation for the Inyo National Forest

Introduction

Relationship to the Forest Plan Revision Process

The National Wild and Scenic Rivers System was created by Congress in 1968 to preserve certain rivers with outstanding natural, cultural and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Wild and Scenic Rivers Act establishing the system is notable for safeguarding the special character of these rivers, while recognizing the potential for their appropriate use and development. It encourages river management that crosses political boundaries and promotes public participation in developing goals for river protection.

The Forest Service 2012 Planning Rule requires the agency to conduct an inventory of rivers and determine wild and scenic river eligibility and classification during land and resource management plan development or revision as outlined in the Wild and Scenic Rivers Act. Section 5(d)(1) states:

> In all planning for the use and development of water and related land resources, consideration shall be given by all federal agencies involved to potential national wild, scenic and recreational river areas, and all river basin and project plan reports submitted to the Congress shall consider and discuss any such potential. The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be evaluated in planning reports by all federal agencies as potential alternative uses of the water and related land resources involved.

The Forest Service 2012 Planning Rule specifically requires that during plan development or revision, river eligibility must be identified unless an inventory has been completed and no changed circumstances or new information warrant further review. The rule also requires the Forest Service to manage those eligible and suitable rivers to protect the values that support their inclusion in the National Wild and Scenic River System until Congress makes a final determination on their designation.

If the Forest Service has completed a systematic, comprehensive inventory of eligible rivers and classification or a suitability study that the responsible official deems is complete, and there are no changed circumstances or additional information, then the agency is not required to conduct additional assessment and study at the time of a proposed plan, plan amendment or plan revision. This process must be documented in an appendix to the environmental impact statement for the national forest land and resource management plan.

Wild and Scenic River Evaluation Requirements

The process used to identify and evaluate rivers for their potential eligibility is found in the Forest Service Land Management Planning Handbook FSH 1909.12, chapter 80. This will be referred to as the Wild and Scenic Rivers Evaluation Handbook. This chapter of the Forest Service Handbook contains guidance and instruction the agency must use to carry out the direction contained in 36 CFR section 219.7(vi) of the Planning Rule. Additional guidance can be found in the Interagency Wild and Scenic Rivers Coordinating Council technical paper: "The Wild and Scenic River Study Process," December 1999.

The process includes a sequence of four steps, three of which are required during plan revisions. The Wild and Scenic Rivers Handbook directs the national forest interdisciplinary team to complete the evaluation of rivers to be studied for eligibility, considering best available scientific information and public input.

1. **Inventory**: Forests must develop a systematic and comprehensive inventory of rivers to consider for their potential eligibility. Unless a previous systematic inventory of study rivers has been completed and eligible rivers identified, the interdisciplinary team shall develop a comprehensive inventory to evaluate to determine which rivers are eligible for inclusion in the National Wild and Scenic River System. If a systematic inventory of eligible rivers has been completed, the extent of the study process during plan development or revision can be limited to evaluation of any rivers that were not previously evaluated for eligibility and those with changed circumstances.[2] The Wild and Scenic Rivers Evaluation Handbook instructs the interdisciplinary team to include all potential wild, scenic and recreational rivers flowing wholly or partially on National Forest System lands as identified in the Nationwide Rivers Inventory and by other sources. The Wild and Scenic Rivers Evaluation Handbook instructs that the rivers to be studied for eligibility must include at a minimum the equivalent of all rivers named on a standard U.S. Geological Survey 7.5 minute quadrangle map.

2. **Eligibility determination:** National forest staff must determine stream eligibility for inclusion in the National Wild and Scenic Rivers System. To be eligible for designation, a river must be free-flowing and possess 1 or more outstandingly remarkable values. Thus, the eligibility analysis consists of an examination of the river's hydrology, including any human-made alterations, and an inventory of its natural, cultural and recreational resources.

   An outstandingly remarkable value must be river-related and determined to be unique, rare or exemplary feature that is significant at a comparative regional or national scale. Potential outstandingly remarkable values may include: scenery, recreation, geology, fish and wildlife populations and habitat, prehistory, history or other river-related values (paleontological, botanical, or cultural values). While the spectrum of resources that may be considered is broad, all values should be directly river-related. They should:

   - be located in the river or on its immediate shore lands (generally within ¼ mile on either side of the river);
   - contribute substantially to the functioning of the river ecosystem; and/or
   - owe their location or existence to the presence of the river.

3. **Classification:** After the Forest Service determines if a river or portions of a river are eligible, each inventoried segment is then assigned a preliminary classification of "wild," "scenic," or "recreational." Where current levels of access and development vary within an eligible river segment, it may be further segmented and assigned different classifications. Distinct segments may contain differing and non-overlapping classifications. For example, a 100-mile wild and scenic river found to be eligible may be segmented and classified as "wild" for 50 miles, "scenic" for 30 miles, and "recreational" for 20 miles. Classification is based on the level of human development of the shoreline, watercourse and access at the time a river is found eligible. The Wild and Scenic River Act and interagency guidelines describe classifications for eligible rivers as:

[2] See section 82.4 if the Wild and Scenic Rivers Evaluation Handbook.

- **Wild rivers:** Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
- **Scenic rivers:** Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
- **Recreational rivers:** Those rivers, or sections of rivers, that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

4. **Suitability**: The fourth step, suitability, may happen during plan revision but is not required. During suitability, the Forest Service assesses the eligible river's potential for inclusion in the National Wild and Scenic Rivers System. This study evaluates the potential physical, biological, economic and social effects of adding the river to the National Wild and Scenic Rivers System. A suitability study provides the basis for determining which rivers to recommend to Congress as potential additions to the national system. This analysis and decision-making step will not be completed as part of the current forest plan revision process, but will be completed in a future separate environmental analysis process.

Process to Identify Rivers to be Considered for Eligibility for Inclusion in the National Wild and Scenic Rivers System

Inventory

The evaluation of rivers to be studied for eligibility was completed considering best available scientific information and public input. Table C-2 in the next section displays the total number of named rivers or river segments on the Inyo National Forest that were identified for inclusion in the inventory. Creation of the inventory of rivers to consider their potential as additions to the National Wild and Scenic Rivers System included the following steps:

- A regional hydrologist used the national hydrological dataset to create a preliminary list of rivers and river segments that were the equivalent of all named rivers on a 7.5 minute quad. This preliminary list was then checked against the standard U.S. Geological Survey 7.5 minute quadrangle maps to ensure that all named rivers were included.
- Rivers in the dataset were removed from the inventory if:
  - the rivers were already designated as wild and scenic rivers
  - the rivers were already recommended through a previous study, environmental analysis, and decision to be added to the National Wild and Scenic Rivers System

Public Input on the Inventory

To ensure that rivers of interest identified by the public were included in the inventory, we reviewed the following references. We affirmed that all rivers identified by the public as potential wild and scenic rivers were included in the inventory.

Sierra Forest Legacy Conservation Strategy, wild and scenic river appendix:
(http://www.sierraforestlegacy.org/FC_ConservationStrategy/FC_ConservationStrategy2.php)

The Nationwide Rivers Inventory (NRI):
(http://www.nps.gov/ncrc/programs/rtca/nri/index.html)

Listing of California rivers that are part of the National Rivers Inventory created by the National Park Service:
(https://www.nps.gov/subjects/rivers/california.htm)

Friends of the River publication "Potential Wild and Scenic Rivers in California – 2001 Inventory:
(http://www.friendsoftheriver.org/site/DocServer/2001PWSRC_Inventory.pdf?docID=222.)

In this last publication by Friends of the River, there are 19 rivers identified for the Inyo National Forest. On their website they mention:

> Friends of the River is lobbying the Forest Service to ensure that these plan revisions incorporate wild and scenic river studies on more than 311 of eligible or potentially eligible streams and rivers, including segments of the Kings River, lower Kern River, Tule River, and Hot Creek.

During the assessment phase, we received detailed feedback specific to wild and scenic rivers that we compiled into a report (Wild and Scenic Rivers (WSR) – Public Feedback from Assessment Phase, 11/25/13) and reviewed for content related to rivers of interest to include in the inventory. We affirmed that all rivers of interest from these comments were included in the inventory.

We also received comments on wild and scenic rivers during the public comment period for the proposed action. We reviewed these comments for content related to rivers of interest and affirmed that all rivers of interest were included in the inventory.

After the final inventory dataset was created, we divided the inventory into rivers or river segments that had been considered in previous eligibility evaluations and those that had not. To determine which portions of the inventory had never been considered in previous evaluations, we examined all historical wild and scenic river eligibility review and suitability study records and identified segments that had been evaluated in previous efforts. The previous findings for outstandingly remarkable values, classification, and eligibility were documented in the dataset.

Results of the Inventory

Table C-1 summarizes number of river segments and miles considered for eligibility on the Inyo National Forest, which are shown on the following map (Figure C-1).

Table C-1. Inventory of rivers considered for eligibility on the Inyo National Forest

National Forest	Number of GIS Segments	Approximate Miles of River in the Inventory	Approximate Miles of Rivers in the Inventory that Have Been Previously Evaluated	Approximate Miles of Rivers in the Inventory that Have Not Been Previously Evaluated
Inyo	304	1,224.6	245.5	979.1

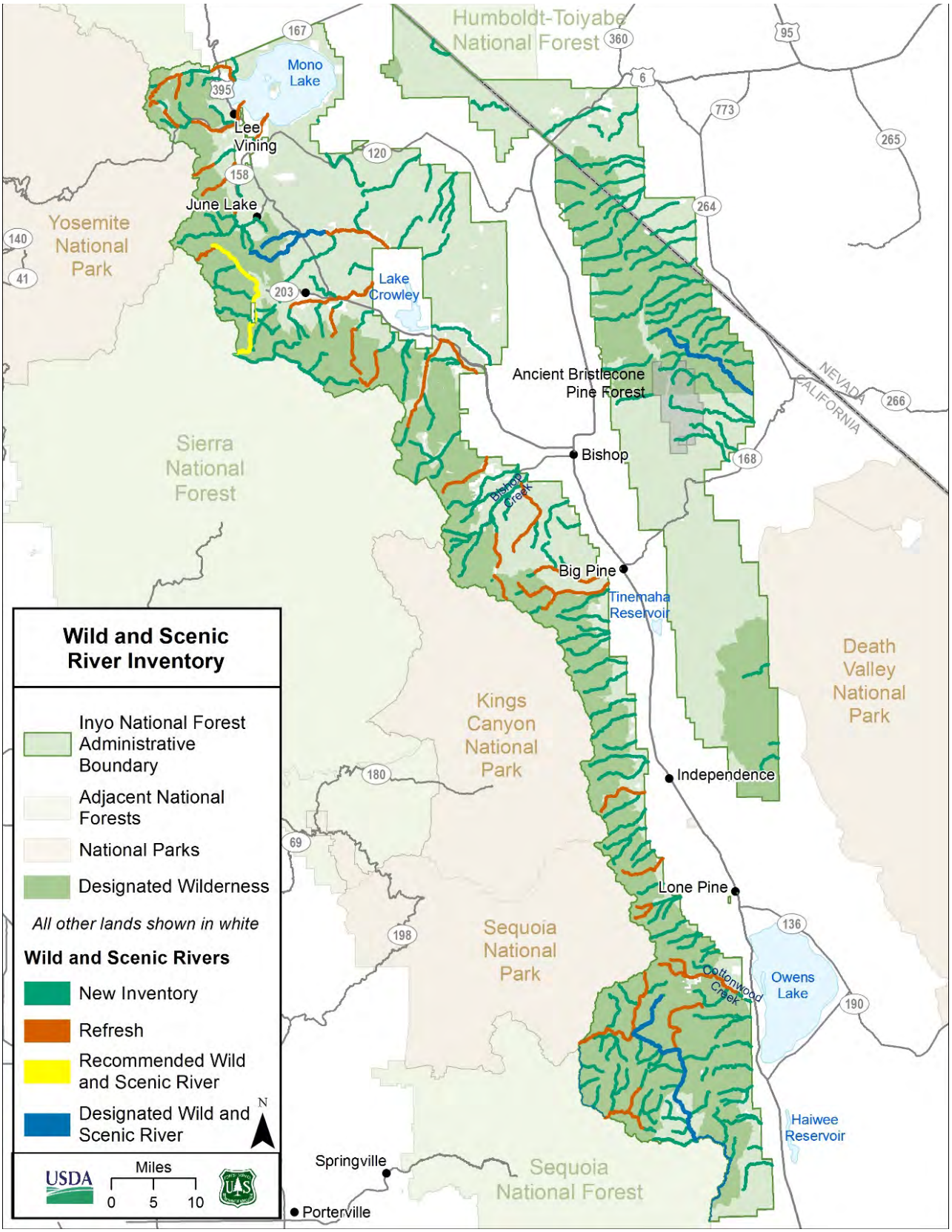

Figure C-1. Map of Inyo National Forest wild and scenic rivers inventory

Process Used to Evaluate Each River for Eligibility for Inclusion in the National Wild and Scenic Rivers System

The primary function of the evaluation step is to assess each river in the inventory to determine if it is eligible to be considered as a potential addition to the National Wild and Scenic Rivers System. To be considered eligible, a river must have free flow and at least one identified outstandingly remarkable value. The process for evaluation is different depending on if a previous evaluation for eligibility occurred. The processes used for review of new inventory that has never been evaluated for eligibility, and inventory that has previously been reviewed for eligibility are described in detail below.

Process for the Review of Inventory Never Evaluated for Eligibility

1. We initially screened the new inventory and identified which rivers might potentially have river-related values for scenery, recreation, geology, fish (population/habitat), wildlife (population/habitat), prehistory, history or other river-related values such as botanical or ecological values. In this step, a determination was not made about the relative significance of the values, but identification was completed of values that could potentially be unique, rare, exemplary or significant at a regional or national scale. If no values were identified for a river, it was eliminated from further consideration. These findings were documented in the dataset.
2. We determined if each river in the new inventory had free flow. If a river did not have free flow, it was eliminated from further consideration. These findings were documented in the dataset. Interdisciplinary teams used the description of "free flowing" as defined in the National Wild and Scenic Rivers System Act. Free flowing is defined as:

   > Existing or flowing in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modification. Low dams, diversion works, and other minor structures may be permitted, provided the waterway remains generally natural and riverine in appearance. Segments of rivers above or below impoundments can also qualify as free flowing. There is no established minimum size for eligibility, either in length or volume of flow. Flows are considered sufficient for eligibility if they sustain or complement the outstandingly remarkable values for which the river would be designated.

3. If we found a river had at least one river-related value that could potentially be unique, rare, exemplary or significant at a regional or national scale, and it also had free flow, it was identified for more detailed review to determine if the values were outstandingly remarkable values. If a river did not have at least one river-related value that could potentially be unique, rare, exemplary or significant at a regional or national scale, it was eliminated from further consideration. These findings were documented in the dataset.
4. We established a region of comparison for evaluating the river-related values. If the regions of comparison from previous eligibility reviews could be found, these were used for consistency. In some previous efforts, this information was not documented.
5. We established criteria to evaluate each identified river-related value. The baseline criteria are described in the Interagency Wild and Scenic Rivers Coordinating Council technical paper "The Wild and Scenic River Study Process."
6. Using the region of comparison and outstandingly remarkable values criteria, we used the best available science and information to evaluate each river. The findings for each river evaluated were documented in the dataset and in narrative descriptions.

7. If a river was determined to be eligible, we assigned a classification based on the current condition of each of the following attributes: water resources development, shoreline development, accessibility and water quality.
8. Findings for each river evaluated are documented in a dataset and in the narratives in the new inventory sections for each forest that follows at the end of this appendix. Each narrative includes the following:
    - river/segment geographic information system number
    - river/segment name
    - location
    - county where the river is located
    - beginning point description
    - end point description
    - mileage of the total length studied and the total length found eligible
    - eligibility findings
    - a determination of free flow
    - determination of outstandingly remarkable values including a description and outstandingly remarkable values finding for each value that was examined
    - a summary of eligibility findings
9. Classification: This section was completed only if we found a river to be eligible. The original reach studied may have been broken into multiple segments if necessary for classification. If segments were created, the beginning and end points and mileage for each segment are described along with the current condition of each of the attributes (water resources development, shoreline development, accessibility, and water quality). A preliminary classification of "wild, "scenic" or "recreational" was assigned.

Process for Review of Inventory Previously Evaluated for Eligibility

1. We gathered, reviewed, described and referenced documentation of any previous wild and scenic river evaluation(s) that were completed on the Inyo National Forest and summarized the previous evaluation(s).
2. Using the best available science, information, and public comments, we determined if there were any changed conditions or new information since the previous evaluation(s). The review included looking at any previously evaluated rivers that were found to have river-related values, both those previously found eligible and those that were not. If new information or changed conditions were identified, these were described in the evaluation narrative documentation.
3. If new information or changed conditions were present, we then determined if the new information affected the previous findings for eligibility and preliminary classification for previously evaluated rivers or river segments.
4. If new information or changed conditions resulted in changes in the previous finding for free flow, outstandingly remarkable values, or classification, we provided an updated discussion of findings for each river or river segment using the same format as described

in item 8 in the new inventory process. The region of comparison and outstandingly remarkable values criteria were the same used for the review of the new inventory.

5. For all previously evaluated rivers reaffirmed as eligible with no changes based on our interdisciplinary review, the record was checked to make sure that good narrative information existed. If the record was lacking the equivalent level of information and description as was completed for the new inventory, we completed an updated narrative.

Summary of Public Input on Wild and Scenic Rivers

The public provided input on the wild and scenic rivers within the Inyo National Forest through two avenues: input during the November 2013 assessment phase on the Assessment Topic Papers for Designated Areas prepared by the Inyo, Sequoia, and Sierra National Forests; and through comments provided on the notice of intent and proposed action. In general, the comments provided input on four topics:

1. comprehensive river management plans for existing wild and scenic rivers;
2. the wild and scenic river study process the national forest should undertake during forest plan revision;
3. outstandingly remarkable values of rivers and streams within the national forest that are not designated wild and scenic rivers; and
4. plan components for wild and scenic rivers that should be included in forest plan revision.
5. There were also a limited number of comments expressing support for or against additional wild and scenic river designations. The following is a summary of these comments:

Comments addressing forest plan revision and comprehensive river management plans for designated rivers:

- The forest plan revision should include a process and timeline to update the existing comprehensive river management plans for the North and South Forks of the Kern River, Kings River, and Merced Rivers because of changed circumstances, including potential impacts to outstandingly remarkable values and increases in the nonboating recreation use, particularly on the North Fork of the Kern River.
- The forest plan revision should include a process and timeline to complete comprehensive river management plans for the Upper Owens River Headwaters and Cottonwood Creek.
- The Forest Service should adopt interim measures to protect the outstandingly remarkable values of wild and scenic rivers until comprehensive river management plans are updated or completed.
- The comprehensive river management plan for the Upper Owens River Headwaters should identify the outstandingly remarkable recreational, geological, wildlife, and botanical-ecological values of upper Deadman Creek.

Comments addressing the study process and eligibility or suitability determinations during forest plan revision:

- The Forest Service should complete a new study process for wild and scenic rivers during forest plan revision, including a comprehensive inventory of potentially eligible streams, and

suitability studies for eligible streams. For previously inventoried rivers, new information or changed conditions should trigger updates to the inventory.

- Suitability determinations are not necessary during forest plan revision, and should be deferred until triggered by either a conservation or development proposal.
- During forest plan revision, the Inyo National Forest should complete suitability determinations for streams that have been determined to be eligible for inclusion in the National System because each national forest made this commitment through settlement agreements on their current land and resource management plans during the early 1990s.
- The Forest Service should complete suitability studies during forest plan revision because if they don't complete these studies a separate National Environmental Policy Act environmental analysis would be required, which would presumably mean additional staff costs. Also, individual suitability evaluations limit the context of river decisions presented to the public.
- The Forest Service should retain the suitability determination of several rivers it has previously recommended for inclusion in the National System.
- The Forest Service should coordinate with the Bureau of Land Management to complete a suitability determination for eligible segments of Rock Creek and Hot Creek, and complete the study process for Big Pine, Lone Pine, George, and Independence Creeks.
- There are changed circumstances on the streams entering Mono Lake that warrant a new study process for these streams, which include Rush Creek, Lee Vining Creek, and Parker Creek.
- The study process should include Dexter Canyon, Wet Canyon, Black Canyon, Marble Canyon, and Birch Creek.
- The study process should reexamine streams identified as eligible by the Inyo National Forest in 1993 in order to identify any additional outstandingly remarkable values.

Input on outstandingly remarkable values

- Hot Creek provides outstanding Class II whitewater opportunities.
- The North and South Fork of the Kern River and the Kings and South Fork Kings Rivers have outstandingly remarkable whitewater boating opportunities.

Input on plan components

- The desired conditions for wild and scenic rivers should include maintaining and enhancing river flow conditions for recreation.
- The desired condition statement for wild and scenic rivers should be more extensive, such as the statement contained in the Sierra Nevada Framework document.
- Guidelines for wild and scenic rivers should include the protection of in-stream flows for recreational values.
- To organize the wild and scenic river components, the plan's management areas should include one or more geographic areas for wild and scenic rivers.
- The Forest Service should not include any plan elements that limit fish stocking or limit angling on wild and scenic rivers.

- Any potential contribution of timber from designated wild and scenic rivers to the timber sale program needs to be described in the plan components.

Input in general support of additional wild and scenic rivers

- Wild and scenic rivers are places where wildlife can live and thrive relatively undisturbed.

Input that did not support additional Wild and Scenic Rivers

- Additional wild and scenic river designations would limit the agency's ability to make the forest more fire resilient.

Results of the Evaluation

New Inventory

Step 1: Review of the new inventory to determine if each river (or portion of river) has free flow and at least one river-related value that could potentially be regional or nationally significant.

How the Inyo National Forest interdisciplinary team initially screened the new inventory and identified which rivers have free flow.

Our team used the description of "free flowing" as defined in the Wild and Scenic Rivers Act. All segments not in the previous inventory and all currently eligible rivers and streams were evaluated using this definition. Free flowing is defined as "existing or flowing in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modification." "Low dams, diversion works, and other minor structures may be permitted, provided the waterway remains generally natural and riverine in appearance. Segments of rivers above or below impoundments can also qualify as free flowing. There is no established minimum size for eligibility, either in length or volume of flow. Flows are considered sufficient for eligibility if they sustain or complement the outstandingly remarkable values for which the river would be designated."

Free flow was determined based on information in the Inyo National Forest files including the special uses database and anecdotal references from employees involved in land management decision-making processes. Using the definition of free flowing as described above, we determined that the creeks within this study are free flowing. Although not all are georeferenced, our staff has knowledge of impoundments of creeks by Southern California Edison, Los Angeles Department of Water and Power, Recreation Special uses permit holders, and other permit holders with water rights on the creeks within the Inyo National Forest.

The following rivers were analyzed and determined to be free-flowing:

Adobe Creek	Birch Creek	Cartago Creek	Crest Creek
Alger Creek	Bishop Creek	Chiatovich Creek	Crooked Creek
Ash Creek	Boundary Creek	Cold Creek	Davis Creek
Bairs Creek	Braley Creek	Cold Water Creek	Dechambeau Creek
Baker Creek	Brownie Creek	Convict Creek	Deer Creek
Barigan Stringer	Busher Creek	Cottonwood Creek	Dexter Creek
Beartrack Creek	Cabin Creek	Cow Creek	Diaz Creek
Beer Creek	Carroll Creek	Crater Creek	Division Creek

Dry Creek
East Fork Coyote Creek
East Fork Rock Creek
Egypt Creek
Falls Creek
Fern Creek
Fish Creek
Freeman Creek
Fuller Creek
Furnace Creek
Gable Creek
Goodale Creek
Gunter Creek
Haiwee Creek
Hell for Sure Creek
Hells Hole Creek
Hilton Creek
Hogback Creek
Honeybee Creek
Horse Creek
Hot Creek
Huntoon Creek
Hutchinson Creek
Indian Creek
Indian Garden Creek
Inyo Creek
Iron Creek
Johnson Creek
Kern Peak Stringer
King Creek
Kingfisher Stringer
Lamarck Creek
Laurel Creek
Lee Vining Creek
Left Stringer
Leidy Creek
Lewis Stringer
Little Cottonwood Creek
Little Hot Creek
Little Pine Creek
Loco Creek
Lone Pine Creek
Lone Tree Creek
Long Canyon Creek
Long Stringer
Lost Trout Creek
Malpais Creek
Mammoth Creek
Marble Creek
McAfee Creek
McGee Creek
McLaughlin Creek
Meysan Creek
Middle Creek
Middle Fork Bishop Creek
Mill Creek
Millner Creek
Minaret Creek
Mine Creek
Monache Creek
Montgomery Creek
Morgan Creek
Morris Creek
Movie Stinger
Ninemile Creek
N. Fork Bairs Creek
N. Fork Big Pine Creek
N. Fork Birch Creek
N. Fork Bishop Creek
N. Fork Chiatovich Creek
N. Fork Crooked Creek
N. Fork Lamarck Creek
N. Fork Lone Pine Creek
N. Fork Lubken Creek
N. Fork McAfee Creek
N. Fork Oak Creek
N. Fork Perry Aiken Creek
N. Fork Willow Creek
O'Harrel Canyon Creek
Oak Creek
Olancha Creek
Onion Creek
Owens River
Pelisier Creek
Perry Aiken Creek
Pinchot Creek
Pine Creek
Pinyon Creek
Piute Creek
Pizona Creek
Poison Creek
Purple Creek
Rawson Creek
Red Mountain Creek
Redrock Creek
Reds Creek
Reversed Creek
Right Stringer
Rock Creek
Rough Creek
Round Mountain Stringer
Rush Creek
Sawmill Creek
Schaeffer Stringer
Shadow Creek
Shepherd Creek
Sherwin Creek
Snake Creek
Soda Creek
S. Fork Ash Creek
S. Fork Big Pine Creek
S. Fork Birch Creek
S. Fork Chiatovich Creek
S. Fork Cottonwood Creek
S. Fork Kern River
S. Fork Lubken Creek
S. Fork McAfee Creek
S. Fork Oak Creek
S. Fork Perry Aiken Creek
S. Fork Willow Creek
Stokes Stringer
Strawberry Creek
Summit Creek
Symmes Creek
Taboose Creek
Thibaut Creek
Tinemaha Creek
Toler Creek
Trail Creek
Tres Plumas Creek
Tuttle Creek
Unnamed Perennial Volcanic Creek
Walker Creek
Warren Fork
Waucoba Wash
West Stringer
Wet Creek
Whisky Creek
Wildhorse Creek
Wilfred Creek
Williamson Creek
Willow Creek
Wilson Creek
Witcher Creek
Wyman Creek
Yost Creek

The following rivers/segments were analyzed and determined not to be free-flowing due to multiple dams and diversions with highly regulated flows that have reduced the system's natural flow:

- Bishop Creek (1.014)
- Middle Fork Bishop Creek (1.104.2)
- South Fork Bishop Creek (1.178.2)

How the Inyo National Forest interdisciplinary team initially screened the new inventory and identified which rivers might potentially have river-related values.

We reviewed the comprehensive inventory (developed during the fall, 2014), which includes all named streams on the U.S. Geological Survey 7.5 minute quadrangle maps. The inventory included approximately 979 miles of river that had never previously been assessed for eligibility. On all of these rivers, we identified if any scenery, recreation, geology, history, prehistory, fish, wildlife, ecological or botanical river-related values were present that could potentially be an outstandingly remarkable value. The intent of this assessment was to identify those rivers with values, and the specific types of values on those rivers, that had the potential to be outstandingly remarkable. The criteria for the initial assessment for presence of river-related values, as we applied it to the Inyo National Forest, is summarized below.

Scenery – The landscape elements of landform, vegetation, water, color and related factors result in notable or exemplary visual features or attractions. We identified streams that had features, such as cascades, waterfalls, and aspen stands.

Recreation – Recreational opportunities are, or have the potential to be, popular enough to attract visitors from throughout or beyond the region of comparison or are unique or rare within the region. Recreation opportunities within the region of comparison are diverse and attract visitors from outside the region. Common recreation activities include developed and dispersed camping, picnicking and day use, hiking, mountain biking, off-highway vehicles, fishing, sightseeing, and general forest exploration. Unique or rare recreation opportunities within the region of comparison would include unique fishing opportunities for golden trout or wild trout populations, whitewater rafting, boating, and sightseeing and photography related to outstanding scenery values.

Geology – The river, or the area within the river corridor, contains one or more example of a geologic feature, process or phenomenon that is unique or rare within the region of comparison. Potential outstanding values for geology included glacial features, volcanic features, and unique rock formations.

Fisheries – The presence of wild stocks, or federal or state-listed threatened, endangered, or sensitive species or the river provides exceptionally high quality habitat for these fisheries. Streams with threatened, endangered or sensitive amphibian species were also considered. Within the region of comparison, streams with Sierra and mountain yellow-legged frog, Owens tui-chub, golden trout, or a wild trout fishery were identified as having potentially outstanding values.

Wildlife – The presence of wildlife species considered to be unique and/or Federal or State listed threatened, endangered, or sensitive species or the river corridor provides exceptionally high quality habitat for these species. Yosemite toad is a federally listed species identified as a potentially outstandingly remarkable value within the region of comparison.

History – The river or area within the river corridor contains one or more sites or features associated with a significant event, an important person, or a cultural activity of the past that was rare or one-of-a-kind in the region. Many such sites are listed on the National Register of Historic Places. A historic site or features is 50 years old or older in most cases.

Prehistory - The river, or area within the river corridor, contains one or more sites where there is evidence of occupation or use by Native Americans. Sites must have unique or rare characteristics or exceptional human interest values. Sites may have national or regional importance for interpreting prehistory; may be rare and represent an area where a culture or cultural period was

first identified and described; may have been used concurrently by two or more cultural groups; and/or may have been used by cultural groups for rare sacred purposes. Many such sites are listed on the National Register of Historic Places, which is administered by the National Park Service.

Other (Botanical): Unique and rare plants, vegetation types, and ecosystems were selected from the following criteria:

1. Vegetation types – aspen, cottonwood, oaks, dry forb, alkali flat, using the Inyo National Forest Potential Natural Vegetation (2012 TEUI) dataset. These types are sometimes, though not always, river-related.
2. Geomorphology – glaciers, rock glaciers, cinder cones (all support unique ecosystems); from TEUI dataset.
3. Geology – mafic metamorphics, carbonates (also support unique ecosystems); from TEUI.
4. Rare plants – NRIS/corporate data.
5. Other (Cultural): Unique and significant tribal cultural value(s) that are intrinsically linked the river or river corridor.

Table C-2. Results of the initial review of the inventory for river-related values and free flow on the Inyo National Forest

Inventory Measurement	Total	New Inventory Determined to Have Free Flow	New Inventory with Potentially Significant River-Related Values
Number of GIS Segments	246	245	73
Number of Miles	1010	1003	241

Step 2: Completion of an eligibility assessment on the rivers in the new inventory that have been determined to have free flow and at least one potentially regionally or nationally significant river-related value.

We studied in more detail the 73 segments (241 miles) of rivers that were determined in the previous step to have both free flow and river-related values that could potentially be outstandingly remarkable. Using the criteria outlined in "The Wild and Scenic River Study Process" technical paper (IWSRCC, December 1999) we identified rivers that had outstandingly remarkable values.

Criteria for Outstandingly Remarkable Values

Scenery: The landscape elements of landform, vegetation, water, color and related factors result in notable or exemplary visual features and/or attractions. When analyzing scenic values, additional factors may be considered such as seasonal variations in vegetation, scale of cultural modifications, and the length of time negative intrusions are viewed. Scenery and visual attractions may be highly diverse over the majority of the river or river segment.

In applying this scenery criteria, unique scenery considered as an outstandingly remarkable value included scenery with views of unique geologic formations; unique vistas; or unique landscapes with combinations of alpine lakes, high peaks, and water features such as waterfalls.

Recreation: Recreational opportunities are, or have the potential to be, popular enough to attract visitors from throughout or beyond the region of comparison or are unique or rare within the

region. Visitors are willing to travel long distances to use the river resources for recreational purposes. River-related opportunities could include, but are not limited to, sightseeing, wildlife observation, camping, photography, hiking, fishing, hunting and boating. Interpretive opportunities may be exceptional and attract, or have the potential to attract, visitors from outside the region of comparison. The river may provide, or have the potential to provide, settings for national or regional usage or competitive events.

In applying recreation criteria, unique recreation considered as an outstandingly remarkable value included recreation experiences such as unique fishing opportunities (for example fishing for golden trout or Blue Ribbon fishery areas); areas that offered unique scenery that enhanced the recreation experience (for example, unique formations, or vistas); or where a multiple combination of recreational experiences occur, such as hiking, backpacking, wildlife viewing, photography, and fishing.

Geology: The river, or the area within the river corridor, contains one or more examples of a geologic feature, process or phenomenon that is unique or rare within the region of comparison. The feature(s) may be in an unusually active stage of development, represent a "textbook" example, and/or represent a unique or rare combination of geologic features (erosional, volcanic, glacial or other geologic structures).

In applying these criteria for geology, unique geologic features considered as an outstandingly remarkable value include lava formations, rare mineral deposits, hot springs, or unique rock formations.

Fish: Fish values may be judged on the relative merits of either fish populations, habitat, or a combination of these river-related conditions.

- **Populations:** The river is nationally or regionally an important producer of resident and/or anadromous fish species. Of particular significance is the presence of wild stocks and/or Federal or State-listed (or candidate) threatened, endangered, or sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination of "outstandingly remarkable."
- **Habitat:** The river provides exceptionally high quality habitat for fish species indigenous to the region of comparison. Of particular significance is habitat for wild stocks and/or federal or state listed (or candidate) threatened, endangered or sensitive species. Diversity of habitats is an important consideration and could, in itself, lead to a determination of "outstandingly remarkable."

In applying these criteria, these features were identified as an outstandingly remarkable value if the area represents important habitat for breeding or are occupied at critical life stages, like breeding; or the area offers exceptional habitat or diverse habitat for the species.

Wildlife: Wildlife values may be judged on the relative merits of either terrestrial or aquatic wildlife populations or habitat or a combination of these conditions.

- **Populations:** The river, or area within the river corridor, contains nationally or regionally important populations of indigenous wildlife species. Of particular significance are species considered to be unique, and/or populations of Federal or State-listed (or candidate) threatened, endangered, or sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination of "outstandingly remarkable."

- **Habitat:** The river, or area within the river corridor, provides exceptionally high quality habitat for wildlife of national or regional significance, and/or may provide unique habitat or a critical link in habitat conditions for federal or state listed (or candidate) threatened, endangered, or sensitive species. Contiguous habitat conditions are such that the biological needs of the species are met. Diversity of habitats is an important consideration and could, in itself, lead to a determination of "outstandingly remarkable."

In applying these criteria, these features were identified as an outstandingly remarkable value if the areas represents important habitat for breeding or are occupied at critical life stages, like breeding. Or the area offers exceptional habitat or diverse habitat for the species.

Prehistory: The river, or area within the river corridor, contains a site(s) where there is evidence of occupation or use by Native Americans. Sites must have unique or rare characteristics or exceptional human interest value(s). Sites may have national or regional importance for interpreting prehistory; may be rare and represent an area where a culture or cultural period was first identified and described; may have been used concurrently by two or more cultural groups; and/or may have been used by cultural groups for rare sacred purposes. Many such sites are listed on the National Register of Historic Places, which is administered by the National Park Service (see notes below regarding National Register sites).

History: The river or area within the river corridor contains one or more sites or features associated with a significant event, an important person, or a cultural activity of the past that was rare or one-of-a-kind in the region. Many such sites are listed on the National Register of Historic Places. A historic site or features is 50 years old or older in most cases (see notes below regarding National Register sites).

Other (Cultural): Outstandingly remarkable values were determined for this resource based on well-substantiated knowledge of unique and significant river-related Tribal cultural values.

Other (Botanical) – Outstandingly remarkable values were determined for this resource based on the unique combination or numerous botanical values associated with the river segments.

Notes about sites listed on the National Register of Historic Places: The Inyo National Forest heritage database was used to identify documented historic and prehistoric sites within a ¼ mile of each analyzed stream segment as river related values. Because there presently are no National Register of Historic Places listed cultural properties on the Inyo National Forest, the National Register had limited use in identifying outstandingly remarkable values. In absence of identified National Register sites, the following factors were considered to determine if documented sites (if present) might qualify as outstanding and remarkable values:

- **Does an important interrelationship exist between documented cultural sites and the river?** In the case of prehistoric sites, or when insufficient information was available, this relationship was presumed to exist.

  Is unique or rare significance of all or any of the documented cultural sites established through National Register of Historic Places evaluation, associative history, site density or other means? The significance of some sites has been established through a consensus determination with the California State Historic Preservation Office as qualifying National Register of Historic Places eligible properties and, in a few cases, draft National Register nomination forms substantiating site significance have been compiled. Other sites, while formally unevaluated against National Register of Historic Places criteria, occur in such great densities or are associated with such well-established themes of significance for the Inyo

(such as nationally important high elevation prehistoric habitation sites in the White Mountains, regionally significant prehistoric obsidian sources, regionally important development of the Los Angeles Aqueduct in Owens Valley and regionally significant historic hydroelectric development) that outstanding and remarkable values were assumed.

The same process was used in the reconsideration of past evaluations as well as for all new evaluations. It is important to note that while known themes of history and prehistory exist throughout the national forest, not all cultural properties have been discovered and documented. For the purposes of the analysis, the ability to recognize prehistory or history values was presumed to rely upon the confirmed presence of associated cultural sites. If the heritage database contains no record of documented prehistoric and/or historic cultural sites within ¼ mile of a stream reach, then no corresponding river-related value (potential outstandingly remarkable value) was identified. If prehistoric and/or historic sites are known, the above criteria were used to determine if available site information warranted identification of an outstandingly remarkable value. This resulted in not carrying forward certain outstandingly remarkable values identified by the past evaluation efforts for a few streams where known sites have not been documented (such as Mill Creek and Walker Creek) or when known sites do not owe their existence to the presence of the river (such as Walker Creek).

Region of Comparison Used for the Eligibility Assessment

We used the following regions of comparison for each value reviewed in the inventory:

- **Scenery –** Scenery values were evaluated across the southeastern subregions of the assessment area identified in the Bioregional Assessment Report (USDA Forest Service 2012). This area includes the southern Sierra Nevada and small portions of the Great Basin located in eastern Nevada.

- **Recreation –** Recreation values were evaluated across the southeastern subregions of the assessment area identified in the Bioregional Assessment Report (USDA Forest Service 2012). This area includes the southern Sierra Nevada and Great Basin and Desert areas of eastern California, approximately from the Bodie Hills in the north, to Owens Lake in the southeast, and including portions of the Sierra and Sequoia National Forests.

- **Geology –** Geology values across the Central and Southern Sierra Nevada (Lake Tahoe to the Sequoia National Forest); the Western Great Basin (Nevada); and northern Mojave Desert.

- **Fish and Wildlife –** Fish and wildlife values, population and habitat were evaluated as follows:

    - Across the species range for Sierra Nevada yellow-legged frog; Northern distinct population segment of Mountain yellow-legged frog; Yosemite toad: Lahontan cutthroat trout; Paiute cutthroat trout; Golden trout; Western yellow-billed cuckoo; Willow flycatcher; and Panamint alligator lizard

    - Across the species range, within the Inyo National Forest for Owens pupfish and Owens tui chub

    - Across the Inyo National Forest for Owens Valley springsnail and Wong's springsnail

- **Prehistory –** Prehistory values were evaluated across the Inyo National Forest.

- **History –** History values were evaluated across the Inyo National Forest.

- **Other (Botanical) –** Other (botanical) values were evaluated across the Central and Southern Sierra Nevada (Lake Tahoe to the Sequoia National Forest); the Western Great Basin (Nevada); and northern Mojave Desert.

- **Other (Cultural)** – Cultural values were evaluated across the Inyo National Forest.

Results of the Eligibility Review of New Inventory

Cottonwood Creek, Segment 5 (River/Segment GIS Number: 1.027.2)

Location:

- County: Inyo County
- Beginning Point Description: Forest Boundary
- End Point Description: Forest Boundary

Mileage:

- Studied: 0.7 miles
- Eligible: 0.7 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- History:
  - Description: Los Angeles Department of Water and Power aqueduct history and development sites.
  - ORV Finding: History is an outstandingly remarkable value. Documented sites are significantly associated with stream and regionally important historic themes unique to the Forest.
- Prehistory:
  - Description: Four prehistoric sites known.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The few sites known are not usual and not associated with any well-established themes of significance for the Inyo.

Summary of Eligibility Findings: Cottonwood Creek, Segment 5, from national forest boundary to national forest boundary is determined to be eligible. It is free flowing. History is an outstandingly remarkable value.

Classification Findings:

This segment has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Impoundments associated with the Cottonwood Creek power plant.
- Shoreline Development: Cottonwood power plant and associated buildings visible from the creek, established dispersed camping along the creek and adjacent to the road.
- Accessibility: Accessible by road.

- Water Quality: Unknown.

Cottonwood Creek, Segment 1 (River/Segment GIS Number: 1.028)

Location:

- County: Mono County
- Beginning Point Description: Wilderness Boundary
- End Point Description: Wild and Scenic River designated segment

Mileage:

- Studied: 1.7 miles
- Eligible: 1.7 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- Fisheries:
  - Description: Paiute cutthroat trout occurs within this segment. This species is listed as endangered by the U.S. Fish and Wildlife Service.
  - ORV Finding: Fisheries is an outstandingly remarkable value because of the uniqueness of this species occurring within the region of comparison.
- History:
  - Description: One historic corral.
  - ORV Finding: History was not determined an outstandingly remarkable value because the one known site is not unusual or associated with any well-established themes of unique significance for the Inyo National Forest.
- Prehistory:
  - Description: Several high elevation prehistoric sites are known.
  - ORV Finding: Prehistory is an outstandingly remarkable value. White Mountains are one of highest elevation prehistoric habitation areas known in the country.
- Other (Ecological and Botanical Values)
  - Description: One population of a rare plant is located along this segment (*Oxytropis deflexa* var. *sericea*)
  - ORV Finding: Other (botanical) is not an outstandingly remarkable value.

Summary of Eligibility Findings: Cottonwood Creek (Segment 1) from the wilderness boundary to the Wild and Scenic River designated segment. Fisheries and prehistory is an outstandingly remarkable value.

Classification Findings:

Cottonwood Creek (Segment 1) has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive. Little or no evidence of human activity.

- Accessibility: Generally inaccessible, no designated routes access this segment.
- Water Quality: Unknown.

Crest Creek (River/Segment GIS Number: 1.031)

Location:

- County: Mono County
- Beginning Point Description: Headwaters
- End Point Description: Inlet to Gem Lake

Mileage:

- Studied: 4.0 miles
- Eligible: 4.0 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Recreation**
  - Description: This area offers fishing opportunities and hiking along the creek for approximately one mile.
  - ORV Finding: Recreation is not an outstandingly remarkable value.
- **Wildlife (Habitat)**:
  - Description: Analysis determined habitat systems where Yosemite toad occurs are actually lakes or meadow systems that are catch basins of snow and rain. In this instance, "river sections" are not creating habitat that contributes to the persistence of this species.
  - ORV Finding: Wildlife (Habitat) is not an outstandingly remarkable value.
- **History**:
  - Description: Baker Cabin. Gem Lake Dam and the National Register Eligible Rush Creek Hydroelectric System.
  - ORV Finding: History is an outstandingly remarkable value. The stream reach contains National Register eligible sites with significant associations to the stream and important hydroelectric development themes on the Forest.

Summary of Eligibility Findings: Crest Creek from the headwaters to the inlet of Gem Lake is eligible. It is free flowing. History is an outstandingly remarkable value.

Classification Findings: Crest Creek has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive, little or no evidence of human activity.
- Accessibility: Generally inaccessible except by trail, for a short distance (one mile).
- Water Quality: Unknown.

Division Creek, Segment 2 (River/Segment GIS Number: 1.041.2)

Location:

- County: Inyo County
- Beginning Point: John Muir Wilderness Boundary
- End Point: Forest Boundary

Mileage:

- Studied: 3.4 miles
- Eligible: 3.4 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Recreation:**
  - Description: This area offers fishing, day-use, hiking, and wild-flower viewing opportunities.
  - ORV Finding: Recreation is not an outstanding remarkable value.
- **History**:
  - Description: Variety of Los Angeles Department of Water and Power sites known, including power plant, penstock, sand traps and ditches.
  - ORV Finding: History is an outstandingly remarkable value. The stream reach contains sites with significant associations to the stream and unique themes of regionally significant water extraction development on the Forest.
- **Prehistory**:
  - Description: Variety of prehistoric sites known.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. Known sites are not usual, unusually dense or associated with any well-established themes of significance for the Inyo.

Summary of Eligibility Findings: Segment 2 of Division Creek is determined to be eligible. It is free flowing. History is an outstandingly remarkable value.

Classification Findings:

This segment has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Some existing impoundments or diversion.
- Shoreline Development: Some development, substantial evidence of human activity.
- Accessibility: Readily accessible by road.
- Water Quality: Unknown.

Fish Creek (River/Segment GIS Number: 1.053)

Location:

- County: Madera and Fresno
- Beginning Point Description: Headwaters
- End Point Description: Confluence with Middle Fork San Joaquin River

Mileage:

- Studied: 20.4 miles
- Eligible: 20.4 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Scenery**
  - Description: Highly scenic river corridor including waterfalls, granite cascades, and soda springs.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Popular hiking trail within the Ansel Adams Wilderness.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Includes granite features, like rounded boulders, that add to the uniqueness of the scenery.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **Wildlife:**
  - Description: Yosemite toad breeding populations occur in meadow and upland systems adjacent to this segment.
  - ORV Finding: Wildlife is an outstandingly remarkable value.
- **Fisheries**:
  - Description: Planted rainbow and brook trout fishery, no native fishery.
  - ORV Finding: Fisheries is not an outstandingly remarkable value
- **Prehistory**:
  - Description: Four scattered prehistoric sites known.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The few known sites are not usual and not associated with any well-established themes of significance for the Inyo.
- **Other (Botanical)**:
  - Description: Moist meadow is present within the river corridor.

- ♦ ORV Finding: Other (Botanical) is not an outstandingly remarkable value because this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Summary of Eligibility Findings: Fish Creek from headwaters to confluence with Middle Fork San Joaquin is determined to be eligible. It is free flowing. Scenery, recreation, wildlife, and geology are outstandingly remarkable values.

Classification:

Located within Ansel Adams Wilderness, Fish Creek has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive. Little or no evidence of human activity.
- Accessibility: Generally inaccessible, except by trail.
- Water Quality: Unknown

Hot Creek, Segment 1 (River/Segment GIS Number: 1.067)

Location:

- County: Mono County
- Beginning Point Description: Headwaters
- End Point Description: Intersection of stream and Forest Road 3S45G

Mileage:

- Studied: 5.6 miles
- Eligible: 5.6 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values:

- **Other (Botanical)**
  - ♦ Description: A moist meadow is found along this segment.
  - ♦ ORV Finding: Other (Botanical) is an outstandingly remarkable value.
- **History**
  - ♦ Description: High concentration of documented historic sites including administrative buildings, sawmill foundation, refuse scatters, and historic sites related to recreation and resource extraction.
  - ♦ ORV Finding: History is an outstandingly remarkable value. Large numbers of historic sites are documented that are associated with significant themes of historic settlement, resource extraction and development on the Forest.
- **Prehistory**
  - ♦ Description: Dense prehistoric sites associated with regionally significant obsidian quarry and processing areas.

- ♦ ORV Finding: Prehistory is an outstandingly remarkable value. Unusually large numbers of sites associated with regionally significant themes of prehistoric obsidian extraction, processing and trade.

Summary of Eligibility Findings: Hot Creek, Segment 1, is determined to be eligible. It is free flowing. History, prehistory, and other (botanical) are outstandingly remarkable values.

Classification Findings:

Hot Creek, Segment 1 has been given a classification of "recreational" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Some development.
- Accessibility: Readily accessible by road.
- Water Quality: Unknown

Lee Vining Creek, Segment 7 (River/Segment GIS Number: 1.079.2 and 1.079.3)

Location:

- County: Mono County
- Beginning Point: Highway 120
- Ending Point: Southern California Edison (SCE) Powerhouse

Mileage:

- Studied: 2.3 miles
- Eligible: 2.3 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Scenery**
  - ♦ Description: Highly scenic meadow systems below granite peaks.
  - ♦ ORV Finding: Scenery is not an outstandingly remarkable value.
- **Geology**
  - ♦ Description: Description: Glacial features area highly visible from the creek; scenic geology throughout the reach.
  - ♦ ORV Finding: Geology is an outstandingly remarkable value.
- **History**:
  - ♦ Description: Power line, historic travel corridor, historic camp.
  - ♦ ORV Finding: History is not an outstandingly remarkable value. The few documented sites are not significantly associated with the river and not associated with any well-established themes of unique significance for the Inyo.

- **Prehistory**:
  - Description: Three scattered prehistoric sites.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. Only a few sites are known and they are not usual or associated with any well-established themes of significance for the Inyo.

Summary of Eligibility Findings: Lee Vining Creek from Highway 120 to Southern California Edison powerhouse is eligible. It is free flowing. Geology is an outstandingly remarkable value.

Classification Findings:

Lee Vining Creek, Segment 7, has been given a preliminary classification of "Scenic" based on the following:

- Water Resources Development: Free of impoundments.
- Shoreline Development: Largely primitive and undeveloped.
- Accessibility: Accessible in places by road.
- Water Quality: Unknown.

Lee Vining Creek, Segment 8 (River/Segment GIS Number: 1.079.1)

Location:

- County: Mono County
- Beginning Point Description: Inlet to Greenstone Lake
- End Point Description: Outlet of Saddlebag Lake

Mileage:

- Studied: 1.9 miles
- Eligible: 1.9 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Scenery**
  - Description: Description: Highly scenic meadow systems below granite peaks.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Area includes opportunities for day-use, hiking, back-backing, fishing, water-related activities on Saddlebag Lake such as, boating.
  - ORV Finding: Recreation is an outstandingly remarkable value.

- **Geology**
  - Description: Description: Glacial features area highly visible from the creek; scenic geology throughout the reach.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **Wildlife (Population)**
  - Description: Yosemite toad, a threatened species, occurs in meadow and upland systems at the beginning of this segment.
  - ORV Finding: The occurrences of this species are not unique within the region of comparison or this area of the Inyo. Wildlife (population) is not an outstandingly remarkable value.
- **Wildlife (Habitat)**
  - Description: Yosemite toad habitat occurs in the meadow and upland communities along the beginning of this segment.
  - ORV Finding: The presence of this species' habitat is not unique within the region of comparison or this area of the Inyo. Wildlife (habitat) is not an outstandingly remarkable value.

Summary of Eligibility Findings: Lee Vining Creek from inlet of Greenstone Lake to outlet of Saddlebag Lake is eligible. It is free flowing. Scenery, recreation, and geology are outstandingly remarkable value.

Classification Findings: Lee Vining Creek, Segment 8 has been given a preliminary classification of "Scenic" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Largely primitive and undeveloped, no substantial evidence of human activity.
- Accessibility: Accessible in places by trail or boat.
- Water Quality: Unknown.

Little Hot Creek (River/Segment GIS Number: 1.084)

Location:

- County: Mono County
- Beginning Point Description: Antelope Spring
- End Point Description: Forest Boundary

Mileage:

- Studied: 3.9 miles
- Eligible: 3.9 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Scenery**
  - Description: River contributes to vistas of the Sierra Nevada, Glass and White Mountains in the Long Valley area.
  - ORV Finding: Scenery is not an outstandingly remarkable value.
- **Recreation**
  - Description: Area provides for off-road vehicle use along designated Forest routes.
  - ORV Finding: Recreation is not an outstandingly remarkable value.
- **Geology**
  - Description: Unique geologic features; thermally altered volcanic rocks and hot springs.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **Prehistory**:
  - Description: Dense concentration of documented prehistoric sites associated with regionally significant obsidian quarry and processing areas.
  - ORV Finding: Prehistory is an outstandingly remarkable value. Unusually large numbers of sites associated with regionally significant themes of prehistoric obsidian extraction, processing and trade.
- **Other (Ecological and Botanical Values)**
  - Description: Extensive alkali flats in the river corridor along with the rare plant Inyo phacelia.
  - ORV Finding: Other (botanical) is an outstandingly remarkable value.

Summary of Eligibility Findings: Hot Creek from Antelope Spring to the national forest boundary is determined to be eligible. It is free flow. Prehistory, geology and other (botanical) are outstandingly remarkable values.

Classification Findings: Little Hot Creek has been given a classification of "recreational" based on the following:

- Water Resources Development: Some existing impoundments or diversions.
- Shoreline Development: Some development, substantial evidence of human activity.
- Accessibility: Readily accessible by road.
- Water Quality: Unknown

Lone Pine Creek Segment 2 (River/Segment GIS Number: 1.087)

Location:

- County: Inyo County
- Beginning Point Description: John Muir Wilderness boundary
- End Point Description: national forest boundary near Lone Pine Campground

Mileage:

- Studied: 3.9 miles
- Eligible: 3.9 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 3/22/91 memo noted extremely popular recreation area and determined ORVs for scenery and recreation. The 1/21/15 interdisciplinary team review noted recreation opportunity and use is tied to Mt. Whitney and designated wilderness, which is not necessarily river related.

- **Scenery**
  - Description: Highly scenic canyon with views of several towering peaks and granitic walls.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, and camping occur along the creek; these recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison. Hiking opportunities to Mt. Whitney, within proximity of the creek are a unique recreation opportunity. National Scenic Recreation Trail along creek.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Classic example of alluvial fan formation (geomorphology) Views of Mt. Whitney
  - ORV Finding: Geology is an outstandingly remarkable value.
- **History**
  - Description: Whitney Portal Road and trash scatter.
  - ORV Finding: History is not an outstandingly remarkable value. The few sites known are not usual and not associated with any well-established themes of significance for the Inyo.
- **Fisheries (Population and Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery.
  - ORV Finding: Fisheries is not an outstandingly remarkable value.

Summary of Eligibility Findings: Lone Pine Creek (segment 2) from John Muir Wilderness boundary to the forest boundary near Lone Pine Campground is eligible. It is free flowing. Scenery, Recreation, and Geology are outstandingly remarkable values.

Classification Findings:

Lone Pine creek segment 2 has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Free of impoundment.

- Shoreline Development: Developed along areas where trail is located and within campgrounds.
- Accessibility: Accessible by trail.
- Water Quality: Unknown

Mammoth Creek, Segment 2 (River/Segment GIS Number: 1.094.2)

Location:

- County: Mono County
- Beginning Point Description: Intersection with Sherwin Creek
- End Point Description: 0.04 miles after intersection with Sherwin Creek

Mileage:

- Studied: 0.04 miles
- Eligible: 0.04 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Recreation**
  - Description: Segment provides for fishing and camping.
  - ORV Finding: Recreation is not an outstandingly remarkable value.
- **History**
  - Description: High concentration of documented historic sites associated with early settlement, administration, mining, resource extraction and recreation.
  - ORV Finding: History is an outstandingly remarkable value. Large numbers of historic sites are documented that are associated with significant themes of historic settlement, resource extraction and development.
- **Prehistory**
  - Description: Dense concentration of documented prehistoric sites associated with regionally significant obsidian quarry and processing areas.
  - ORV Finding: Prehistory is an outstandingly remarkable value. Unusually large numbers of sites associated with regionally significant themes of prehistoric obsidian extraction, processing and trade.

Summary of Eligibility Findings: Mammoth Creek (Segment 2) from intersection with Sherwin Creek and 0.04 miles after the intersection with Sherwin Creek is eligible. It is free flowing. History and Prehistory are outstandingly remarkable values.

Classification Findings: Mammoth Creek (Segment 2) has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Some existing impoundment or diversion.
- Shoreline Development: Some development, substantial evidence of human activity.

- Accessibility: Readily accessible by road.
- Water Quality: Unknown.

Mammoth Creek, Segment 3 (River/Segment GIS Number: 1.094.3)

Location:

- County: Mono County
- Beginning Point Description: South of Hot Creek by 0.018 miles
- Ending Point Description: Intersection with Hot Creek

Mileage:

- Studied: 0.02 miles
- Eligible: 0.02 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **History**
  - Description: High concentration of documented historic sites associated with early settlement, administration, mining, resource extraction and recreation.
  - ORV Finding: History is an outstandingly remarkable value. Large numbers of historic sites are documented that are associated with significant themes of historic settlement, resource extraction and development.
- **Prehistory**
  - Description: Dense concentration of documented prehistoric sites associated with regionally significant obsidian quarry and processing areas.
  - ORV Finding: Prehistory is an outstandingly remarkable value. Unusually large numbers of sites associated with regionally significant themes of prehistoric obsidian extraction, processing and trade.

Summary of Eligibility Findings: Mammoth Creek (Segment 3) from south of Hot Creek by 0.02 miles to the intersection of Hot Creek is eligible. It is free flowing. History and Prehistory are outstandingly remarkable values.

Classification Findings: Mammoth Creek (Segment 3) has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Some existing impoundments or diversion.
- Shoreline Development: Some development, substantial evidence of human activity.
- Accessibility: Readily accessible by road.
- Water Quality: Unknown.

Mammoth Creek, Segment 4 (River/Segment GIS Number: 1.094.4)

Location:

- County: Mono County
- Beginning Point Description: Wilderness Boundary
- End Point Description: Twin Lakes Outlet

Mileage:

- Studied: 3.5 miles
- Eligible: 3.5 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Recreation**
  - Developed camping, fishing, day-use, and other water activities occur along this segment. These activities are highly concentrated and popular within this area.
    - ORV Finding: Recreation is an outstandingly remarkable value due to the high use occurring in this area that is related to the presence of the water and developed facilities.
- **History**
  - Description: High concentration of documented historic sites associated with early settlement, administration, mining, resource extraction and recreation.
  - ORV Finding: History is an outstandingly remarkable value. Large numbers of historic sites are documented that are associated with significant themes of historic settlement, resource extraction and development.
- **Prehistory**
  - Description: Dense concentration of documented prehistoric sites associated with regionally significant obsidian quarry and processing areas.
  - ORV Finding: Prehistory is an outstandingly remarkable value. Unusually large numbers of sites associated with regionally significant themes of prehistoric obsidian extraction, processing and trade.

Summary of Eligibility Findings: Mammoth Creek (Segment 4) from John Muir Wilderness Boundary to outlet of Twin Lakes is eligible. It is free flowing. Recreation, History and Prehistory are outstandingly remarkable values.

Classification Findings: Mammoth Creek (Segment 4) has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Some existing impoundment or diversion.
- Shoreline Development: Some development, substantial evidence of human activity.
- Accessibility: Readily accessible by road.
- Water Quality: Unknown.

McGee Creek, Segment 2 (River/Segment GIS Number: 1.099)

Location:

- County: Mono County
- Beginning Point Description: Wilderness Boundary
- End Point Description: Forest Boundary

Mileage:

- Studied: 3.8 miles
- Eligible: 3.8 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values:

- **Recreation**
  - Description: Day-use, fishing, and camping occur along this segment.
  - ORV Finding: Recreation is not an outstandingly remarkable value.
- **Geology**
  - Description: Unique geology visible from trail; waterfalls on both sides of the canyon; old sierra rocks, roof pendants
  - ORV Finding: Geology is an outstandingly remarkable value.
- **History**
  - Description: Arborglyph site
  - ORV Finding: History is not an outstandingly remarkable value. The one known site is not unusual or associated with any well-established themes of unique significance for the Inyo.
- **Prehistory**
  - Description: Three prehistoric sites known.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The few known sites are not usual and not associated with any well-established themes of significance for the Inyo.
- **Other (Ecological and Botanical Values)**
  - Description: An aspen stand is located along this segment.
  - ORV Finding: Other (Botanical) is not an outstandingly remarkable value.

Summary of Eligibility Findings: McGee Creek from wilderness boundary to forest boundary is determined to be eligible. It is free flowing. Geology is an outstandingly remarkable value.

Classification Findings: McGee Creek, Segment 2, has been given a preliminary classification of "Recreational" based on the following:

- Water Resources Development: Some existing impoundment or diversion.
- Shoreline Development: Some development, substantial evidence of human activity.
- Accessibility: Accessible by road.
- Water Quality: Unknown.

Middle Fork Bishop Creek (River/Segment GIS Number: 1.104.1)

Location:

- County: Inyo County
- Beginning Point Description: Headwaters
- End Point Description: Outlet of Lake Sabrina

Mileage:

- Studied: 5.2 miles
- Eligible: 5.2 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Scenery**
  - Description: Area is located within the John Muir Wilderness and offers views of high granite peaks and lakes along this segment.
  - ORV Finding: Scenery is not an outstandingly remarkable value.
- **Recreation**
  - Description: Fishing along the end-point of the segment can occur. The majority of the segment is not accessible by trail except for a small portion near Bottleneck Lake.
  - ORV Finding: Recreation is not an outstandingly remarkable value.
- **History**:
  - Description: Lake Sabrina/Dam (hydroelectric system) is NRHP eligible.
  - ORV Finding: History is an outstandingly remarkable value. NRHP eligible site is significantly related to the river and associated with a well-established unique theme of significance for the Inyo.
- **Prehistory**:
  - Description: One prehistoric site.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The one known site is not usual and not associated with any well-established themes of significance for the Inyo.

Summary of Eligibility Findings: Middle Fork Bishop Creek from headwaters to outlet of Lake Sabrina is eligible. It is free flowing. History is an outstandingly remarkable value.

Classification Findings: Middle Fork Bishop Creek has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive, little or no evidence of human activity.
- Accessibility: Generally inaccessible except by trail.
- Water Quality: Unknown.

Mill Creek, Segment 5 (River/Segment GIS Number: 1.105.2)

Location:

- County: Mono County
- Beginning Point Description: Headwaters
- End Point Description: Intersection with Mill Creek, Segment 1.

Mileage:

- Studied: 1.1 miles
- Eligible: 1.1 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values:

- **Geology**
  - Description: Geology is highly scenic due to the majesty of the canyon and the visible evidence of glaciation. Conness Glacier and a large portion of the sierra crest is visible from the top of the canyon.
  - ORV Finding: Geology is an outstandingly remarkable value.

Summary of Eligibility Findings: Mill Creek (segment 5) from headwaters to wilderness is eligible. It is free flowing. Scenery and recreation are outstandingly remarkable values.

Classification Findings: Located within the John Muir Wilderness, it has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive, little or no evidence of human activity.
- Accessibility: Not accessible by trail.
- Water Quality: Unknown

North Fork Crooked Creek (River/Segment GIS Number: 1.126)

Location:

- County: Mono County
- Beginning Point Description: Headwaters

- End Point Description: Confluence with South Fork Crooked Creek

Mileage:

- Studied: 4.6 miles
- Eligible: 4.6 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **History**:
  - Description: Arborglyphs, research station, historic rock structure.
  - ORV Finding: History is not an outstandingly remarkable value. The few known sites are not usual and not associated with any well-established themes of significance for the Inyo.
- **Prehistory**:
  - Description: National Register eligible high elevation prehistoric sites.
  - ORV Finding: Prehistory is an outstandingly remarkable value. National Register eligible high elevation prehistoric habitation sites of national significance are known.

Summary of Eligibility Findings: North Fork Crooked Creek from headwaters to confluence with South Fork Crooked Creek is eligible. It is free flowing. Prehistory is an outstandingly remarkable value.

Classification Findings: North Fork Crooked Creek has been given a preliminary classification of "Scenic" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Largely primitive and undeveloped, no substantial evidence of human activity.
- Accessibility: Accessible in places by road.
- Water Quality: Unknown.

O'Harrel Canyon Creek (River/Segment GIS Number: 1.141)

Location:

- County: Mono County
- Beginning Point: Headwaters
- End Point Description: Forest Boundary

Mileage:

- Studied: 5.3 miles
- Eligible: 5.3 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Fisheries (Population)**:
  - Description: This river includes populations of the federally listed species, Lahontan cutthroat trout.
  - ORV Finding: Fisheries (Population) is an outstandingly remarkable value.
- **Prehistory**:
  - Description: O'Harrel Canyon Site (National Register Eligible) and a variety of other prehistoric sites are known.
  - ORV Finding: Prehistory is an outstandingly remarkable value. National Register eligible prehistoric habitation and obsidian quarry reduction/processing areas are known.

Summary of Eligibility Findings: O'Harrel Canyon Creek from headwaters to forest boundary is determined to be eligible. It is free flowing. Prehistory is an outstandingly remarkable value.

Classification Findings: O'Harrel Canyon Creek has been given a preliminary classification of "Recreational" based on the following:

- Water Resources Development: Some existing impoundment or diversion.
- Shoreline Development: Some development.
- Accessibility: Accessible in places by road.
- Water Quality: Unknown.

Poison Creek (River/Segment GIS Number: 1.153)

Location:

- County: Mono County
- Beginning Point Description: Headwaters
- End Point Description: Intersection with South Fork Cottonwood Creek

Mileage:

- Studied: 3.4 miles
- Eligible: 3.4 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Prehistory**:
  - Description: Alpine villages and game drive.

- ♦ ORV Finding: Prehistory is an outstandingly remarkable value. Known sites are unique and associated with nationally significant high elevation prehistory.

- **Other (Ecological and Botanical Values)**
  - ♦ Description: Multiple rare plants are found in springs within the river corridor. They are not directly associated with the river, only springs.
  - ♦ ORV Finding: Other (Botanical) is not an outstandingly remarkable value.

Summary of Eligibility Findings: Poison Creek from headwaters to intersection with South Fork Cottonwood Creek is eligible. It is free flowing. Prehistory is an outstandingly remarkable value.

Classification Findings:

Poison Creek has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive, little or no evidence of human activity.
- Accessibility: Generally inaccessible, even by trail.
- Water Quality: Unknown.

Rock Creek Segment 3 (River/Segment GIS Number: 1.161)

Location:

- County: Inyo County
- Beginning Point Description: Headwaters
- End Point Description: Box Lake

Mileage:

- Studied: 3.1 miles
- Eligible: 3.1 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values:

- **Scenery**
  - ♦ Description: High country vistas and scenery, highly scenic due to the majesty of the canyon and the visible evidence of glaciation. Dramatic geologic evidence throughout the canyon adds to the outstanding scenic quality of the river corridor.
  - ♦ ORV Finding: Scenery is not an outstandingly remarkable value.
- **Recreation**
  - ♦ Description: Recreation opportunity is primarily hiking, camping and fishing, boating on the lakes, horseback riding. Popular recreation canyon. These recreation opportunities are not unique or rare within the region of comparison, but are attracting large numbers of visitors from outside of the region of comparison.
  - ♦ ORV Finding: Recreation is not an outstandingly remarkable value.

- **Geology**
  - Description: Geology is highly scenic. Outstanding and unique glacial features in granitic batholith.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **Wildlife (Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery.
  - ORV Finding: Wildlife (habitat) is not an outstandingly remarkable value.

Summary of Eligibility Findings: Rock Creek (Segment 3) from headwaters to Box Lake is eligible. It is free flowing. Geology is an outstandingly remarkable value.

Classification Findings:

Rock Creek, Segment 3, has been has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive, some evidence of human use.
- Accessibility: Generally inaccessible except by trail.
- Water Quality: Unknown

Rush Creek, Segment 1 (River/Segment GIS Number: 1.165.1)

Location:

- County: Mono County
- Beginning Point Description: Headwaters
- End Point Description: Inlet of Waugh Lake

Mileage:

- Studied: 3.7 miles
- Eligible: 3.7 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values:

- **Scenery**
  - Description: Outstanding scenery in Upper Rush Creek including the Sierra crest, and many lakes and streams; the stream segment is adjacent to the Pacific Crest Trail
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Outstanding scenery of the Ansel Adams Wilderness. Stream segments are adjacent to the Pacific Crest Trail. This area offers hiking, back-packing, and some fishing recreation opportunities.
  - ORV Finding: Recreation is an outstandingly remarkable value.

- **Wildlife (Populations)**
  - Description: Populations of Yosemite toad occur within this segment.
  - ORV Finding: Wildlife is an outstandingly remarkable value.
- **History**
  - Description: Arboglyph site.
  - ORV Finding: History is not an outstandingly remarkable value. The one known site is not usual and not associated with any well-established themes of significance for the Inyo.
- **Prehistory**
  - Description: Two prehistoric sites known.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The few known sites are not usual and not associated with any well-established themes of significance for the Inyo.

Summary of Eligibility Findings: It is free flowing. Scenery, recreation, and wildlife populations are outstandingly remarkable values.

Classification Findings: Located within Ansel Adams Wilderness, Rush Creek has been given a preliminary classification of "Wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive. Little or no evidence of human activity.
- Accessibility: Generally inaccessible, except by trail.
- Water Quality: Unknown

Rush Creek Segment 2 (River/Segment GIS Number: 1.165.2)

Location:

- County: Mono County
- Beginning Point Description: Inlet of Waugh Lake
- End Point Description: Ansel Adams Wilderness Boundary

Mileage:

- Studied: 4.2 miles
- Eligible: 4.2 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values:

- **Scenery**
  - Description: Outstanding scenery in Upper Rush Creek including the Sierra crest, and many lakes and streams; the stream segment is adjacent to the Pacific Crest Trail
  - ORV Finding: Scenery is an outstandingly remarkable value.

- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for planted rainbow and brook trout, these recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **History**
  - Description: National Register Eligible Hydroelectric Developments, Rush Creek Tramway and Dams.
  - ORV Finding: History is an outstandingly remarkable value. Numerous documented NRHP eligible sites associated regionally significant early hydro-electric development on the Forest.
- **Prehistory**
  - Description: Small concentration of NRHP eligible prehistoric sites.
  - ORV Finding: Prehistory is an outstandingly remarkable value. A small National Register eligible district is known.
- **Other**
  - Description: A moist meadow with aspen is located along this segment.
  - ORV Finding: Other (Botanical) is not an outstandingly remarkable value.

Summary of Eligibility Findings: This segment is determined to be eligible. It is free flowing. Scenery, recreation, history, and prehistory are outstandingly remarkable values.

Classification Findings: Located within Ansel Adams Wilderness, Rush Creek (Segment 2) has been given a preliminary classification of "Wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive. Little or no evidence of human activity.
- Accessibility: Generally inaccessible, except by trail.
- Water Quality: Unknown

Rush Creek Segment 4 (River/Segment GIS Number: 1.165.4; 1.165.6; 1.165.7)

Location:

- County: Mono County

Segment 1.165.4

- Beginning Point Description: Ansel Adams Wilderness Boundary, through Agnew Lake
- End Point Description: Ansel Adams Wilderness Boundary

Segment 1.165.7

- Beginning Point Description: Ansel Adams Wilderness Boundary
- End Point Description: Ansel Adams Wilderness Boundary

Segment 1.165.6

- Beginning Point Description: Ansel Adams Wilderness Boundary
- End Point Description: Confluence with Reversed Creek

Mileage:

- Studied: 1.9 miles
- Eligible: 1.9 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values:

- **History**
  - Description: National Register Eligible Hydroelectric Developments, Rush Creek Tramway, Gem and Agnew Lake Dams.
  - ORV Finding: History is an outstandingly remarkable value. Numerous documented NRHP eligible sites associated regionally significant early hydro-electric development on the Forest.

Summary of Eligibility Findings: This segment is determined to be eligible. It is free flowing. History is an outstandingly remarkable value.

Classification Findings:

GIS portion 1.165.4 and 1.165.6 of Rush Creek has been given a preliminary classification of "Recreational" based on the following:

- Water Resources Development: Some existing impoundment or diversion.
- Shoreline Development: Some development along trail.
- Accessibility: Readily accessible by trail, but not roads.
- Water Quality: Unknown.

GIS portion 1.165.7 of Rush Creek has been given a preliminary classification of "Wild" based on the following:

- Water Resources Development: Free of impoundment
- Shoreline Development: Essentially primitive.
- Accessibility: Generally only accessible by road.
- Water Quality: Unknown.

South Fork Cottonwood Creek (River/Segment GIS Number: 1.180)

Location:

- County: Mono County
- Beginning Point Description: Headwaters
- End Point Description: Intersection with Cottonwood Creek

Mileage:

- Studied: 3.7 miles

- Eligible: 3.7 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Prehistory**:
  - Description: Several unique high elevation prehistoric habitation sites.
  - ORV Finding: Prehistory is an outstandingly remarkable value. Sites are unique and associated with significant themes for the Forest.
- **Other (Ecological and Botanical Values)**
  - Description: Two rare plants are found along this segment (*Oxytropis deflexa* and *Carex scirpoidea*).
  - ORV Finding: Other (botanical) is not an outstandingly remarkable value.

Summary of Eligibility Findings: South Fork Cottonwood Creek from headwaters to the intersection with Cottonwood Creek is eligible. It is free flowing. Prehistory is an outstandingly remarkable value.

Classification Findings: South Fork Cottonwood Creek has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive.
- Accessibility: Once section of the segment is accessible by road, but the rest of the segment generally inaccessible.
- Water Quality: Unknown.

South Fork Oak Creek (River/Segment GIS Number: 1.187.1 and 1.187.2)

Location:

- Inyo County
- Beginning Point Description:
  - Segment 1: Headwaters
  - Segment 2: Wilderness boundary
- End Point Description:
  - Segment 1: Wilderness boundary
  - Segment 2: Road 13S04

Mileage:

- Studied: 7.5 miles
- Eligible: 7.5 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values:

- **Scenery**
  - Description: The largest black oak stands on the Inyo National Forest occur in this drainage. Frog's bit buttercup (rare plant) and water birch riparian communities; coupled with the scenic views of Kearsarge Peak, sardine meadows and Parker lakes, South Fork Oak Creek is a highly scenic creek corridor.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for planted rainbow and brook trout, and camping occur along the creek; these recreation opportunities are not unique or rare within the region of comparison. South Fork Oak Creek does not attract many visitors from outside of the region of comparison due in large part to its remoteness and to the private property located along the creek that is somewhat blocking access.
  - ORV Finding: Recreation is not an outstandingly remarkable value.
- **History**
  - Description: One historic water diversion.
  - ORV Finding: History is not an outstandingly remarkable value. The one known site is not usual and not associated with any well-established themes of significance for the Inyo.
- **Prehistory**
  - Description: Two prehistoric sites known.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The few known sites are not usual and not associated with any well-established themes of significance for the Inyo.
- **Geology:**
  - Description: Unique geology includes some of the southern-most rock glaciers and permanent snowfields in the Sierra Nevada. Includes rock glaciers with ice that support water flow and unique metamorphic geology that contribute to unique vegetation systems.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **Other (Botanical)**
  - Description: Within the South Fork Oak Creek there is the largest black oak stands on the Inyo National Forest. Frog's big buttercup (rare plant) and water birch riparian communities occur in this area as well.
  - ORV Finding: Other (Botanical) is an outstandingly remarkable value.

Summary of Eligibility Findings: South Fork Oak Creek from the Headwaters to National Forest Road 13S04 is determined to be eligible. It is free flowing. Scenery, geology and other (botanical) have been identified as outstandingly remarkable values.

Classification Findings:

Based on the current condition of developments and shoreline access, segment 1 (Headwaters to the wilderness boundary) has been given a preliminary classification of "wild" and segment 2 (wilderness boundary to National Forest System Road 13S04) has been given a preliminary classification of "recreational."

- Water Resources Development:
  - Segment 1: Free of impoundment
  - Segment 2: Some existing diversions (Los Angeles Department of Water and Power).
- Shoreline Development:
  - Segment 1: Essentially primitive. Little or no evidence of human activity
  - Segment 2: Evidence of human activity.
- Accessibility:
  - Segment 1: Generally inaccessible, except by trail
  - Segment 2: Readily accessible by road.
- Water Quality: Unknown

Volcanic Creek (River/Segment GIS Number: 1.203)

Location:

- County: Tulare County
- Beginning Point Description: Volcano Meadow
- End Point Description: Intersection with Golden Trout Creek

Mileage:

- Studied: 2.3 miles
- Eligible: 2.3 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORVs):

- **Scenery**
  - Description: River flows through a lava field.
  - ORV Finding: Scenery is not an outstandingly remarkable value.
- **Geology**
  - Description: Tied to golden trout creek, unique cinder cone and malpais (lava flow) formations.
  - ORV Finding: Geology is an outstandingly remarkable value.

Summary of Eligibility Findings: Volcanic Creek from Volcano Meadow to Intersection with Golden Trout Creek is determined to be eligible. It is free flowing. Geology is outstandingly remarkable value.

Classification Findings:

Volcanic Creek has been given a classification of "Wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive. Little or no evidence of human activity.
- Accessibility: Generally inaccessible, except by trail.
- Water Quality: Unknown

Table C-3. New inventory river segments with river-related values but no associated outstandingly remarkable values (ORVs)

Stream Name	Stream ID	River Related Value
Adobe Creek	1.001	History – An earthen dam is known along this segment. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – One minor prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual and not associated with any well-established themes of unique significance for the Inyo. Other (Botanical) – Moist meadow and *Crepis runcinata* population, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Alger Creek	1.002	Recreation – Hiking occurs along portions of the stream, with some fishing access. This use is not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. Wildlife (Habitat) - Analysis determined habitat systems where the Yosemite toad occur are actually lakes or meadows that are not supported by Alger Creek, rather catch basins of snow and rain. This wildlife river related value was not considered an ORV because "river sections" are not creating habitat that contributes to the persistence of this species. History- Historic recreational residences and a resort are known. History was not determined an ORV because these sites are not unusual or known to be associated with well-established themes of unique significance for the Inyo. Other (Botanical) - Moist meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Ash Creek	1.003	Prehistory- Numerous prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other (Botanical)- Moist meadow and canyon live oak, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River Related Value
Bairs Creek	1.004	Prehistory – Several prehistoric sites are known. Prehistory was not determined an ORV because these sites are not unusual nor associated with any well-established themes of unique significance for the Inyo. Other (Botanical) - Canyon live oak, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Barigan Stringer	1.006	Recreation – Hiking and fishing occur along this stream. This use is not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. Other (Botanical) – Moist meadow and *Ivesia campestris*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Beartrack Creek	1.007	History- Historic sites include the Log Cabin mine (associated with mineral discovery location, not stream) and Lee Vining Ranger Station. History was not determined an ORV because the sites are not unusual or have no important interrelationship to the river and/or are not associated with any well-established themes of unique significance for the Inyo. Prehistory- Several prehistoric sites occur in this area. Prehistory was not determined an ORV because sites are not unusual, do not occur in unusual densities and are not associated with well-established themes of unique significance for the Inyo. Other (Botanical) - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Birch Creek	1.009	History – One historic canal occurs in this area. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – Four prehistoric sites are known in this area. Prehistory was not determined an ORV because sites are not unusual, unusually dense or known to be associated with well-established themes of unique significance for the Inyo.
Birch Creek	1.010	Prehistory – Several prehistoric sites are known in this area. Prehistory was not determined an ORV because sites are not unusual, unusually dense or known to be associated with any well-established themes of unique significance for the Inyo. Other (Botanical) - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Birch Creek	1.011	Geology – This segment contains travertine geologic features. This was determined not to be unique within the Region of Comparison and therefore is not an ORV.
Birch Creek	1.012	Prehistory – Several prehistoric sites are known within this area. Prehistory was not determined an ORV because these sites are not unusual or known to be associated with any well-established themes of unique significance for the Inyo.
Birch Creek	1.013	Prehistory – One prehistoric site is located along this segment. Prehistory was not determined an ORV because the site is not unusual or known to be associated with any well-established themes of unique significance for the Inyo.
Cabin Creek	1.019	History – One historic cabin is known. History was not determined an ORV because this site is not unusual and it is not known to be associated with any well-established themes of unique significance for the Inyo.

Stream Name	Stream ID	River Related Value
Cartago Creek	1.021	History – A historic fence occurs along this segment. History was not determined an ORV because this site is not unusual, and is not known to be associated with any well-established themes of unique significance for the Inyo. Prehistory – Two prehistoric sites are known. Prehistory was not determined an ORV because these sites are not usual and are not known to be associated with any well-established themes of significance for the Inyo. Other - Moist meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Chiatovich Creek	1.022	History – Two historic sites are known. History was not determined an ORV because these sites are not usual and they are not known to be associated with any well-established themes of unique significance for the Inyo. Prehistory – Several prehistoric sites are known. Prehistory was not determined an ORV because these sites are not usual and are not known to be associated with any well-established themes of significance for the Inyo. Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Cold Creek	1.023	History – A historic cabin occurs in this area. History was not determined an ORV because the property is not usual and it is not known to be associated with any well-established themes of unique significance for the Inyo. Prehistory – One prehistoric site is known. Prehistory was not determined an ORV because this site is not usual and not associated with any well-established themes of unique significance for the Inyo. Other – Moist meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Cold Creek	1.024	Other – Moist meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Cold Water Creek	1.025	Recreation – Hiking and fishing occur along these stream. This use is not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. History - Historic mining sites and recreational residences occur in this area. History was not determined an ORV because known sites are not NRHP eligible and/or are not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – Several prehistoric sites occur in this area. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with well-established themes of unique significance for the Inyo.

Stream Name	Stream ID	River Related Value
Convict Creek	1.026.1	Recreation – Fishing and boating occurs on Convict Lake (this segment runs within the lake). These uses are not unique within the Region of Comparison because many areas offer fishing and boating opportunities; therefore recreation is not considered an ORV. History – A historic road, resort and dump occur along this creek. History was not determined an ORV because the known sites are not NRHP eligible and/or unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – Two prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Convict Creek	1.026.2	History - A historic road, resort, dump, CCC stove and ice plant occur along this creek. History was not determined an ORV because known sites are not NRHP eligible and/or unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – A handful of scattered prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with well-established themes of unique significance for the Inyo. Other – Dry meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Cottonwood Creek	1.027.1	Prehistory – Four scattered prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other – Canyon live oak, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Cow Creek	1.029	Other – Dry meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Crater Creek	1.030	Recreation – Hiking and fishing occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. Other – Moist meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Davis Creek	1.034	Prehistory – A few prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
Dechambeau Creek	1.035	Prehistory – One prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual and not associated with any well-established themes of unique significance for the Inyo. Other – *Thelypodium integrifolium* ssp. *complanatum*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River Related Value
Deer Creek	1.036	Recreation – Hiking, backpacking, fishing, and some access to the Pacific Crest Trail occurs along this segment. These uses are not unique within the Region of Comparison because many areas offer hiking, backpacking, and fishing access or opportunities; therefore recreation is not considered an ORV.
Deer Creek	1.037	Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Dexter Creek	1.038	Scenic – This area offers views of landscapes of geologic features and seasonal variations in vegetation. This scenery is not unique within the Region of Comparison, as many areas offer views of different geologic features; therefore this is not an ORV. Geology – These area includes granitic boulders and volcanic mesas; steep walled rim rock canyon, but these features were not considered outstandingly remarkable within the region of comparison. History – Historic features, such as Basque shelters and cabins and a dam/reservoir, are known. History was not determined an ORV because these sites are not importantly associated with the river and/or unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – Numerous prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other – Moist meadow and aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Diaz Creek	1.039	Prehistory – NRHP eligible prehistoric sites are known. Prehistory was not determined an ORV because these sites have been importantly associated with another stream. Other – Moist meadow, canyon live oak, and *Ivesia campestris*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Diaz Creek	1.040	Other – Canyon live oak, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Dry Creek	1.042	Prehistory – Numerous prehistoric sites are known. Prehistory was not determined an ORV because these sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other – Moist meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Dry Creek	1.043	History – One historic ranching facility occurs in this area. History was not determined an ORV because this site has no important interrelationship with the river, is not unusual and not associated with any well-established themes of unique significance for the Inyo. Prehistory – Several scattered prehistoric sites occur in this area. Prehistory was not determined an ORV because these sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.

Stream Name	Stream ID	River Related Value
Dry Creek	1.044.1	History – The NRHP eligible Red Rock Mercury Mine occurs in this area. The mine location is associated with mineral deposits, not the stream. History was not determined an ORV because only one site is known and there is no important interrelationship between the site and the river.
Dry Creek	1.044.2	History – The NRHP eligible Red Rock Mercury Mine occurs in this area. The mine location is associated with mineral deposits, not the stream. History was not determined an ORV because only one site is known and there is no important interrelationship between the site and the river. Prehistory – A prehistoric feature is known along this segment. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.
Dry Creek	1.046	History – An historic administrative site and a dump have been documented in this area. History was not determined an ORV because these sites are not unusual and are not known to be importantly associated with the river or with any well-established themes of unique significance for the Inyo. Prehistory – Several prehistoric sites are documented. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Dry Fork	1.047	Prehistory – One sparse prehistoric site has been documented. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
East Fork Coyote Creek	1.048	History – An historic cabin, corral and stone building are known in this area. History was not determined an ORV because these sites are not unusual, or importantly associated with the river or any well-established themes of unique significance for the Inyo. Prehistory – A couple of prehistoric sites are known. Prehistory was not determined an ORV because these sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other – Moist meadow and *Botrychium crenulatum*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
East Fork Rock Creek	1.049	Recreation – Hiking and fishing access along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. History – Scribed aspen and a sheep camp are documented. History was not determined an ORV because these sites are not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – One prehistoric site occurs in this area. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Other – Dry meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River Related Value
Egypt Creek	1.050	History – NRHP eligible historic hydroelectric features associated with Bishop Creek are known. History was not determined an ORV because the sites are associated with another stream.
Falls Creek	1.051	History – One historic site known within the river corridor. History was not determined an ORV because these sites are not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – Two prehistoric milling sites are known. Prehistory was not determined an ORV because these sites are not unusual or associated with any well-established themes of unique significance for the Inyo. Other – Canyon live oak, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Fern Creek	1.052	History – This historic June Lake rope tow occurs in this area. History was not determined an ORV because these sites are not unusual or associated with any well-established themes of unique significance for the Inyo. Recreation – A hiking trail occurs along portions of this creek to Fern Lake. This area offers fishing and hiking opportunities. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. Other – Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Fuller Creek	1.055	History – An historic rancher camp has been documented. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – Three prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other – Moist meadow and *Calochortus excavatus*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Goodale Creek	1.058	Scenic – This area offers views of high alpine peaks and changes in landscape forms as you move from high elevation alpine habitat to lower elevation sagebrush communities. This scenery is not unique within the Region of Comparison, as the majority of streams within this area showcase contrasting high elevation and lower elevation habitats; therefore this is not an ORV. Prehistory – Four prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
Gunter Creek	1.059	History – One historic mining site is known. History was not determined an ORV because this site is not unusual, has no important interrelationship with the river and is not known to be associated with any well-established themes of unique significance for the Inyo.
Haiwee Creek	1.060	History – A few historic mining sites and trash scatters are documented. History was not determined an ORV because these sites are not unusual and not importantly associated with the river or with any well-established themes of unique significance for the Inyo. Prehistory – Several prehistoric sites are documented. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.

Stream Name	Stream ID	River Related Value
Hell for Sure Creek	1.061	Other – Canyon live oak, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Hilton Creek	1.063	Scenic – This area offers views of high alpine peaks and changes in landscape forms as you move from high elevation alpine habitat to lower elevation sagebrush communities and offers views of the Glass Mountains. This scenery is not unique within the Region of Comparison, as the majority of streams within this area showcase contrasting high elevation and lower elevation habitats; therefore scenery is not an ORV. Recreation – Hiking, backpacking, and fishing occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking, backpacking and fishing access or opportunities; therefore recreation is not considered an ORV. History – Historic features, such as camps, a foundation, notched log and carved tree, are known. History was not determined an ORV because these sites are not unusual or known to be importantly associated with the river or to any well-established themes of unique significance for the Inyo. Prehistory – Several scattered prehistoric sites occur in this area. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other – Aspen and *Helodium blandowii*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Hogback Creek	1.065	Other - Moist meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Honeybee Creek	1.066	History – One historic artifact scatter is known. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – One prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.
Horse Creek	1.220	Prehistory – Five prehistoric sites are known. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Other – Aspen occur along this creek, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Hutchinson Creek	1.069	History – Historic features related to the Queen Valley Mining Site occur in this area. History was not determined an ORV because these sites are not known to be importantly associated with the river. Prehistory – Three prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
Indian Creek	1.069.1	History – Historic features, such as a wagon road, cabin and arborglyph are known. History was not determined an ORV because these sites are not unusual and not importantly associated with the river or to any well-established themes of unique significance for the Inyo.
Inyo Creek	1.071	History – A trash scatter and an historic road are documented. History was not determined an ORV because these sites are not unusual or known to be associated with any well-established themes of unique significance for the Inyo.

Stream Name	Stream ID	River Related Value
Johnson Creek	1.073	History – Historic sites documented include cow camps and snow survey shelters. History was not determined an ORV because these sites are not unusual or known to be associated with any well-established themes of unique significance for the Inyo. Prehistory – One prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual or associated with well-established themes of unique significance for the Inyo. Other - Meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Kern Peak Stringer	1.074	Recreation - Hiking occurs along this stream. This use is not unique within the Region of Comparison and therefore recreation is not considered an ORV. Other - Meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
King Creek	1.075.5	Prehistory – One prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual or associated with well-established themes of unique significance for the Inyo.
King Creek	1.075.4	Prehistory – One prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual or associated with well-established themes of unique significance for the Inyo.
King Creek	1.075.3	Prehistory – One prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual or associated with well-established themes of unique significance for the Inyo.
King Creek	1.075.2	Prehistory - One prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual or associated with well-established themes of unique significance for the Inyo.
King Creek	1.075.1	Prehistory - Two prehistoric sites are known. Prehistory was not determined an ORV because these sites are not unusual or associated with well-established themes of significance for the Inyo. Other – A wet meadow was identified along this segment, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Lamarck Creek	1.077	Scenic – This stream offers scenic views of the high Sierra and alpine lakes. This scenery is not unique within the Region of Comparison because many of the streams within this area occur in high elevation habitats with alpine lakes; therefore is not considered an ORV. Recreation – Hiking, fishing, and developed camping occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV.
Laurel Creek	1.078	Prehistory – Two prehistoric sites occur in this area. Prehistory was not determined an ORV because few sites known are not unusual or associated with any well-established themes of unique significance for the Inyo. Other – *Salix brachycarpa*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River Related Value
Left Stringer	1.080	Recreation – Hiking occurs along this stream. This use is not unique within the Region of Comparison because many areas offer hiking opportunities; therefore recreation is not considered an ORV. Other – Meadow and *Ivesia campestris*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Lewis Stringer	1.082	Prehistory – Several prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other – Meadow and *Botrychium crenulatum*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Little Cottonwood Creek	1.083	Recreation – Hiking and fishing occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. History – An historic pack station and corral are known. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Other – *Ivesia campestris*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Little Pine Creek	1.085	Prehistory – A handful of scattered prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
Loco Creek	1.086	Prehistory – Several prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
Lone Tree Creek	1.088	History – Historic features occur such as a foundation, corral and historic refuse are known. History was not determined an ORV because these sites are not unusual and not importantly associated with the river and/or to any well-established themes of unique significance for the Inyo.
Long Canyon Creek	1.089	Prehistory – One prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual or associated with well-established themes of unique significance for the Inyo.
Long Stringer	1.090	History – A historic corral occurs in this area. History was not determined an ORV because only one site is known that is not unusual or associated with any significant unique Forest themes. Prehistory – One prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual or associated with well-established themes of unique significance for the Inyo. Other – Moist meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River Related Value
Lost Trout Creek	1.092	Prehistory –Five prehistoric sites are known. Prehistory was not determined an ORV because these sites are not unusual, unusually dense or associated with any well-established themes of significance for the Inyo. Other – Meadow and *Ivesia campestris*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Malpais Creek	1.093	Scenic – A small portion of this stream flows through a lava flow and offers views of changing landscapes. This scenery is not unique within the Region of Comparison, as other streams flow through larger lava flow features, making them unique. Scenery is not an ORV. Geology - Flows through lava formations, however this feature is not unique within the Region of Comparison and therefore is not an ORV.
Mammoth Creek	1.094.1	Scenery – This area offers views of the Town of Mammoth Lakes and lakes. This scenery is not unique within the Region of Comparison, as the majority of streams within this area offer views of lakes; therefore this is not an ORV. Recreation – Hiking, fishing, day-use, and backpacking occur along this segment. These uses are not unique within the Region of Comparison because many areas offer these recreation opportunities; therefore recreation is not considered an ORV. History – Historic mining features occur in this area. History was not determined an ORV because these sites are not unusual or known to be associated with any well-established themes of unique significance for the Inyo. Prehistory- A lithic scatter prehistoric site is known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
McGee Creek	1.098	Scenic – This area offers views of high alpine peaks and changes in landscape forms as you move from high elevation alpine habitat to lower elevation sagebrush communities. This scenery is not unique within the Region of Comparison, as the majority of streams within this area showcase contrasting high elevation and lower elevation habitats; therefore this is not an ORV. Recreation – Motorized vehicle use, hiking, and dispersed camping occur along this stream. These uses are not unique within the Region of Comparison because many areas offer motorized vehicle, hiking and fishing access or opportunities; therefore recreation is not considered an ORV. History – Historic mining features and an administrative site occur in this area. History was not determined an ORV because these sites are not unusual or known to be associated with any well-established themes of unique significance for the Inyo. Prehistory – About a dozen widely scatter prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
McGee Creek	1.100	Prehistory – Two prehistoric sites are known. Prehistory was not determined an ORV because these sites are not usual and not associated with any well-established themes of unique significance for the Inyo.

Stream Name	Stream ID	River Related Value
McLaughlin Creek	1.101	History – One historic sheep camp known. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – Several prehistoric sites are known. Prehistory was not determined an ORV because these sites are not unusual or associated with any well-established themes of unique significance for the Inyo.
Meysan Creek	1.102	Scenic – Scenery includes granite peaks and views of Mount Whitney and other high Sierra peaks. This scenery is not unique within the Region of Comparison because many streams include views of high alpine peaks; therefore is not an ORV. Recreation – Hiking occurs along this stream. This use is not unique within the Region of Comparison because many areas offer hiking access or opportunities; therefore recreation is not considered an ORV.
Middle Creek	1.103	Prehistory – A handful of prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
Mill Creek	1.105.1	Scenery – Views of high elevation peaks, canyon walls, and Mono Lake. This scenery is not unique within the Region of Comparison, as the majority of streams within this area include high elevation peaks, canyon walls and Mono Lake; therefore this is not an ORV. Recreation – Developed camping and fishing occur along this stream. These uses are not unique within the Region of Comparison because many areas offer developed camping and fishing access or opportunities; therefore recreation is not considered an ORV. History – Three historic sites are known along this segment. History was not determined an ORV because the there is no information about these sites to conclude they are unusual, importantly associated with the stream or associated with any well-established themes of unique significance for the Inyo. Prehistory – Two prehistoric sites occur in this area. Prehistory was not determined an ORV because these few sites are not unusual or associated with any well-established themes of unique significance for the Inyo. Other- Aspen and Ranunculus hydrocharoides, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Minaret Creek	1.107	Scenic – Stream includes small cascades and views of high Sierra peaks. This scenery is not unique with the Region of Comparison because many areas include streams with cascades or other features similar to this area; therefore is not an ORV. Recreation – Hiking and fishing occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation not considered an ORV. Other – Meadow and *Bruchia bolanderi*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River Related Value
Mine Creek	1.108	History – Historic features from mining activities occur within this area. History was not determined an ORV because these sites are associated with mineral discovery locations rather than the river and are not unusual or unique for the Forest. Prehistory – One prehistoric site is documented. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Other – *Agrostis humilis*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Monache Creek	1.109	History – An historic cabin and garbage dump are known. History was not determined an ORV because these sites are not unusual and not importantly associated with the river or to any well-established themes of unique significance for the Inyo. Prehistory – Three prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
Morgan Creek	1.111	Scenic – Stream offers views of high Sierra peaks. This scenery is not unique within the Region of Comparison because many streams offer views of high Sierra peaks; therefore not considered an ORV. Recreation – Hiking occurs along this stream. This use is not unique within the Region of Comparison because many areas offer hiking opportunities; therefore recreation is not considered an ORV. History – The nationally significant NRHP eligible the Pine Creek Tungsten Mine occurs along this creek. History was not determined an ORV because the site is related to the mineral discovery location rather than to the stream.
Morris Creek	1.112	Prehistory – Numerous prehistoric sites are documented. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
Movie Stringer	1.113	History – One historic cabin site is documented. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory - One prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Other – Meadow, Botrychium spp., and Ivesia campestris, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Ninemile Creek	1.115	Recreation – Hiking occurs along this stream. This use is not unique within the Region of Comparison because many areas offer opportunities; therefore recreation is not considered an ORV. History – One historic administrative site (Casa Vieja Guard Station) is known. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Other – Moist meadow and *Ivesia campestris*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
North Fork Bairs Creek	1.116	Other - Canyon live oak, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River Related Value
North Fork Bishop Creek	1.123	Scenic – Offers scenic views of high elevation peaks and high alpine lakes. This scenery is not unique within the Region of Comparison because many streams offer views of high peaks and alpine lakes; therefore is not an ORV. Recreation – Hiking, fishing, and developed camping occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. History – The National Register of Historic Places eligible Cardinal Gold Mine is documented, as well as a pack station and snow survey shelter. History was not determined an ORV because the mine has been associated with Middle Fork Bishop Creek and the other known sites are not unusual or associated with any well-established themes or unique significance for the Inyo. Prehistory: Four scattered prehistoric sites are known. Prehistory was not determined an ORV because only a few sites are known and they are not usual and or associated with any well-established themes of unique significance for the Inyo.
North Fork Chiatovich Creek	1.124.1	Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
North Fork Lone Pine Creek	1.130	History – An historic road is documented. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.
North Fork Oak Creek	1.136	Recreation – Motorized uses and hiking occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking or motorized use access or opportunities; therefore recreation is not considered an ORV. History – Two historic sites, including a stone foundation and rock structure, occur in this area. History was not determined an ORV because these sites are not unusual or known to be associated with any well-established themes of unique significance for the Inyo. Other – Black oak, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
North Fork Perry Aiken Creek	1.138	Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Olancha Creek	1.143	History – Historic features, such as a ditch and toll road, occur in this area. History was not determined an ORV because these sites are not unusual, importantly linked to the river and/or known to be associated with any well-established themes of unique significance for the Inyo.
Pinchot Creek	1.148	History – Three historic sites including mine features and a town site are documented in this area. History was not determined an ORV because these sites are not unusual and not importantly associated with the river and/or to any well-established themes of unique significance for the Inyo. Prehistory – A prehistoric site occurs in this area. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.

Stream Name	Stream ID	River Related Value
Pine Creek	1.149	Scenic – This area offers views of high alpine peaks and changes in landscape forms as you move from high elevation alpine habitat to lower elevation sagebrush communities. This scenery is not unique within the Region of Comparison, as the majority of streams within this area showcase contrasting high elevation and lower elevation habitats; therefore this is not an ORV. Recreation – Hiking occurs along this stream. This use is not unique within the Region of Comparison because many areas offer hiking opportunities; therefore recreation is not considered an ORV. Wildlife Habitat - Several Yosemite toad detections occur at meadows and ponds near Pine Creek, but the few detections near the creek are not confirmed breeders. This creek provides dispersal habitat but not necessarily suitable breeding habitat. This wildlife river related value was not considered an ORV because "river sections" are not creating habitat that contributes to the persistence of this species. History – Historic features related to mining activity such as road and settlement. History was not determined an ORV because these sites are connected to mineral discovery locations rather than the stream. Other - Cottonwood, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Pinyon Creek	1.150	History – One historic trash scatter is documented. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo Prehistory – Two prehistoric sites are known. Prehistory was not determined an ORV because only a few sites are known and they are not usual or associated with any well-established themes of unique significance for the Inyo.
Piute Creek	1.151	History – Historic mining features and an aqueduct occur in this area. History was not determined an ORV because these sites are not unusual or not importantly associated with the river or to any well-established themes of unique significance for the Inyo.
Pizona Creek	1.152	Prehistory – Four scattered prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
Purple Creek	1.154	Scenic – Stream has cascades and views of high Sierra peaks. This scenery is not unique with the Region of Comparison because many streams in this area share these features; therefore is not an ORV. Recreation – Hiking and fishing occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. Geology – Cascades and views of granitic peaks and other features occur along this stream. These features are not unique within the Region of Comparison and therefore not an ORV.
Rawson Creek	1.155	Other - Meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Red Mountain Creek	1.156	Recreation – Hiking and motorized uses occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and motorized access or opportunities; therefore recreation is not considered an ORV.

Stream Name	Stream ID	River Related Value
Redrock Creek	1.157	History – A few historic sites such as cabins, a corral and historic camp are known. History was not determined an ORV because these sites are not unusual or known to be associated with any well-established themes of unique significance for the Inyo. Prehistory - Two prehistoric sites are known. Prehistory was not determined an ORV because only a few sites are known and they are not usual or associated with any well-established themes of unique significance for the Inyo. Other – Bruchia bolanderi, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Reds Creek	1.158	Scenery - High country vistas and scenery, highly scenic due to the majesty of the canyon and the visible evidence of glaciation. Dramatic geologic evidence throughout the canyon adds to the quality of the river corridor. This scenery is not unique within the Region of Comparison and therefore is not an ORV. History – An historic administrative site is known. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – Two prehistoric sites are known. Prehistory was not determined an ORV because only a few sites are known and they are not usual or associated with any well-established themes of unique significance for the Inyo.
Reversed Creek	1.159.2	History – Several historic sites are known, including the Rush Creek Powerhouse and Tramway, the June Lake Rope Tow, a recreation residence tract and an administrative site. The eligible Rush Creek hydroelectric system is associated with Rush Creek rather than Reversed Creek. History was not determined an ORV because the remaining known sites are not NRHP eligible, not unusual and/or not importantly associated with the river or to any well-established themes of unique significance for the Inyo. Prehistory - Five scattered prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
Right Stringer	1.160	Other- Meadow, Ivesia campestris, and *Trichophorum pumilum*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Round Mountain Stringer	1.164	Prehistory – Numerous prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other- Meadow and Ivesia campestris, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River Related Value
Rush Creek	1.165.3	Scenic – This area provides views of high alpine peaks and canyons, as well as fall color opportunities. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery. Recreation – Fishing and boating are known, which is within Grant Lake. These uses are not unique within the Region of Comparison because many areas offer fishing and boating access or opportunities; therefore recreation is not considered an ORV. History - The Grant Lake Dam and a ditch system are known. History was not determined an ORV because known sites are NRHP ineligible or not unusual or associated with significant unique themes for the Inyo. Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Rush Creek	1.165.5	Scenic – This area provides views of high alpine peaks and canyons, as well as fall color opportunities. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery. Recreation – This area offers opportunities for fishing. This use is not unique within the Region of Comparison because many areas offer fishing access or opportunities; therefore recreation is not considered an ORV. History - The Grant Lake Dam and a ditch system are known. History was not determined an ORV because known sites are NRHP ineligible or not unusual or associated with significant unique themes for the Inyo.
Rush Creek	1.166	Scenic – This area provides views of high alpine peaks and Mono Lake. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery.
Sawmill Creek	1.167	Scenic – Area offers scenic views of high peaks. This scenery is not unique within the Region of Comparison therefore it is not an ORV. Recreation – Hiking occurs along this stream. This use is not unique within the Region of Comparison because many areas offer hiking opportunities; therefore recreation is not considered an ORV. History – A few historic sites including arborglyphs, a corral, and a sawmill/flume are known. History was not determined an ORV because these sites are not unusual and/or known to be associated with any well-established themes of unique significance for the Inyo.
Sawmill Creek	1.168	Prehistory - Four scattered prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River Related Value
Shadow Creek	1.170	Scenic – Area offers scenic views of high alpine peaks and cascades along creek. This scenery is not unique within the Region of Comparison, as many areas offer views of these same features; therefore is not an ORV. Recreation – Hiking, fishing, and backpacking occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. History – One mining prospect is known in this area. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – One prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.
Shepherd Creek	1.171	Prehistory – One prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.
Sherwin Creek	1.172	History – One cabin and historic trash scatter are known. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – Prehistoric sites are known. Prehistory was not determined an ORV because these sites are not unusual or associated with any well-established themes of unique significance for the Inyo.
Snake Creek	1.173	Prehistory – Multiple prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other - Meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Soda Creek	1.174	Recreation – Hiking and some motorized uses occur along this creek. These uses are not unique within the Region of Comparison because many areas offer hiking and motorized access or opportunities; therefore recreation is not considered an ORV. Prehistory – Eleven scattered prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other - Meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
South Fork Birch Creek	1.177	Prehistory – A couple of prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
South Fork Chiatovich Creek	1.179	Other – Meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
South Fork Crooked Creek	1.181	Other – Moist meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
South Fork Lubken Creek	1.185	Other – Canyon live oak, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River Related Value
South Fork McAfee Creek	1.186	Other – Moist meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Stokes Stringer	1.190	Other – Meadow and Ivesia campestris, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Strawberry Creek	1.191	Recreation – Hiking and fishing occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. History – An historic trash scatter is known. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory - Multiple prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other – Meadow and *Ivesia campestris*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Summit Creek	1.192	History – An historic flume is known along this segment. History was not determined an ORV because this site is not associated with any well-established themes of unique significance for the Inyo. Prehistory - Multiple prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
Summit Creek	1.193	History – Historic dendroglyphs are known within this area. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory - Multiple prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other – Meadow, *Ivesia campestris*, and *Cordylanthus eremicus* ssp. *kernensis*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Taboose Creek	1.195	Recreation – Hiking and some motorized uses occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and motorized access or opportunities; therefore recreation is not considered an ORV. Other – *Sphenopholis obtusata*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Tinemaha Creek	1.197	Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River Related Value
Trail Creek	1.199	Scenic – Area offers scenic views of high elevation peaks, including Boundary Peak and views of Fish Lake Valley. This scenery is not unique within the Region of Comparison, as many streams in this area offer views of mountain peaks; therefore is not an ORV. Recreation – Hiking, fishing, and motorized uses occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking, motorized use and fishing access or opportunities; therefore recreation is not considered an ORV. History – An historic rock structure is known along this creek. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory - Multiple scattered prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other – *Botrychium crenulatum*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Tres Plumas Creek	1.200	History - Five historic sites including a corral, herder camps, a bridge and two dendroglyphs are known. History was not determined an ORV because the known sites are not unusual and not importantly associated to any well-established themes of unique significance for the Inyo.
Tuttle Creek	1.201	History – An NRHP eligible Ashram is known. The location of the Ashram is linked to its ridge top location rather than the stream. History was not determined an ORV because this site is has no important interrelationship with the river. Other – Canyon live oak, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Unnamed Perennial	1.202	Prehistory – Numerous prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
Walker Creek	1.204	History – An historic residential site and ditch are known. History was not determined an ORV because these sites are not unusual or known to be associated with any well-established themes of unique significance for the Inyo. Prehistory – Two prehistoric sites occur in this area. Prehistory was not determined an ORV because only a few sites are known and they are not usual and or associated with any well-established themes of unique significance for the Inyo.
Walker Creek	1.205.1	Scenery – Area offers views of high mountain peaks, Walker Lake, and Mono Lake. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery. Recreation – Boating and fishing occur on this segment of Walker Creek, which occurs in Walker Lake. These uses are not unique within the Region of Comparison because many areas offer boating and fishing access or opportunities; therefore not recreation is considered an ORV. Prehistory – One prehistoric site is documented. Prehistory was not determined an ORV because only one site is known and it is not unusual or associated with well-established themes of significance for the Inyo.

Stream Name	Stream ID	River Related Value
Walker Creek	1.205.2	Scenery – Area offers views of high mountain peaks, Walker Lake, and Mono Lake. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery. Other – Dry meadow and aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Walker Creek	1.206	Scenery – Area offers views of high mountain peaks, Walker Lake, and Mono Lake. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery.
Warren Fork	1.207	Recreation – Hiking occurs along this creek. This use is not unique within the Region of Comparison because many areas offer hiking opportunities; therefore recreation is not considered an ORV. History – An historic power line is documented along this creek. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.
West Stringer	1.209	Recreation – Hiking and fishing occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV.
Wet Fork	1.210.2	Geology - Granitic boulders and volcanic mesas are known. These features are not unique within the Region of Comparison and therefore not an ORV.
Wet Fork	1.210.1	Geology – Granitic boulders and volcanic mesas are known. These features are not unique within the Region of Comparison and therefore not an ORV. Prehistory – Three prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Whisky Creek	1.211	History – A historic recreational residence tract occurs in this area. History was not determined an ORV because this site is not unusual or known to be associated with any well-established themes of unique significance for the Inyo. Prehistory – One sparse prehistoric site is known in this area. Prehistory was not determined an ORV because the site is not unusual or associated with well-established themes of significance for the Inyo. Other – *Carex scirpoidea* ssp. *pseudoscirpoidea*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Wildhorse Creek	1.212	Prehistory – One prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.
Wilfred Creek	1.213	Prehistory – Two prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.

Stream Name	Stream ID	River Related Value
Wilson Creek	1.216	Geology – River is located within the Mono Basin and flows through different geologic features. This is not unique within the Region of Comparison and therefore is not an ORV. Other – Alkali flat near Mono Lake, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Witcher Creek	1.217	Prehistory – Three prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo.
Wyman Creek	1.218	History – An historic road and building occur in this area. History was not determined an ORV because these sites are not unusual or known to be associated with any well-established themes of unique significance for the Inyo. Prehistory - Two prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other – Wet meadow, *Physocarpus alternans*, and *Thelypodium integrifolium* ssp. *complanatum*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Yost Creek	1.219	Scenic – Stream offers views of the June Lake area and high elevation peaks. This scenery is not unique within the Region of Comparison because many streams in this area offer views of high peaks; therefore is not an ORV. Recreation – Hiking occurs along this stream. This use is not unique within the Region of Comparison because many areas offer hiking opportunities; therefore recreation is not considered an ORV. History – The June Lake Rope Tow and a mining prospect occur in this area. History was not determined an ORV because these sites are not NRHP eligible, unusual and/or known to be associated with any well-established themes of unique significance for the Inyo. Prehistory – One prehistoric site is known to occur. Prehistory was not determined an ORV because this site known is not unusual or associated with any well-established themes of unique significance for the Inyo. Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Review of Previously Evaluated Inventory

Description of Previous Studies Completed

The Inyo National Forest completed an eligibility study of 326 miles of river segments found on 28 streams on the forest, which is documented in a series of memos between 1990 and 1993. From this study, the staff determined that 169 miles of river segments on 19 streams met the eligibility criteria. Another 157 miles of river segments on 9 streams did not meet the eligibility criteria, along with a few segments of streams with eligible segments. The 9 streams determined as not eligible include the following: Baker Creek, Coyote Creek, George Creek, Horton Creek, Independence Creek, Mulkey Creek, Ninemile Creek, Redrock Creek, and Rush Creek.

Additionally, the portions of the Middle Fork of the San Joaquin on the Inyo National Forest had been determined eligible and found suitable as part of the 1986 Sierra National Forest Land and Resource Management Plan DEIS, Appendix E as shown in Table C-4. In 1992 the four segments of the Middle Fork San Joaquin River were found as suitable and are currently being managed as a recommended wild and scenic river.

Table C-4. Middle Fork San Joaquin River Findings of the 1988 Sierra National Forest Land and Resource Management Plan Draft Environmental Impact Statement, Appendix E of the Sierra National Forest Draft Environmental Impact Statement and determined Suitable in the 1991 Sierra National Forest Land and Resource Management Plan

Middle Fork San Joaquin River	Segment 1	Segment 2	Segment 3*	Segment 4
Outstandingly Remarkable Values (ORVs)	Scenery Recreation Geology Fish	Scenery Recreation Geology	Scenery Recreation Geology	Scenery Recreation Geology
Beginning and Ending Points	Headwaters at Thousand Island Lake to Agnew Meadows (6.0 miles)	Agnew Meadows to Soda Springs footbridge (4.5 miles)	Soda Springs footbridge to Rainbow Falls (2.5 miles)	Rainbow Falls to confluence with North Fork San Joaquin (9.0 miles)
Free Flowing	Yes	Yes	Yes	Yes
Impoundments	No	Yes	No	No
Diversions	No	No	No	No
Classification	Wild	Recreational	Scenic	Wild

*Note: Segments 1 and Segment 2 are on the Inyo National Forest. Segment 3 is on both the Inyo National Forest and Devils Postpile National Monument. Segment 4 is on the Inyo and Sierra National Forests.

Process the Inyo National Forest Interdisciplinary Team Used to Determine if There Are Any Changed Conditions or New Information since the Previous Evaluation(s)

To determine if there were any changed conditions or new information since these evaluations, we considered new federally listed species, changes to management within previously eligible streams, historical records, and any changes to the outstandingly remarkable values identified for these rivers. We determined that all the previously eligible rivers should be brought forward as eligible in this review. This was due to two factors: 1) the previous studies were conducted prior to the availability of "The Wild and Scenic River Study Process," which outlines the steps, definitions, and criteria used in evaluation, and 2) the 1990s study record does not give a clear indication of what made the outstandingly remarkable values a unique, rare, or exemplary feature at a regional or national scale. In addition to these factors, the majority of these streams were identified as eligible as part of a settlement agreement and a decision was made that they should continue to be considered eligible because of this status.

Eligibility was reaffirmed on all previously eligible rivers. None of the rivers that were previously found to be not eligible were found eligible in this review. On the reaffirmed eligible rivers, outstandingly remarkable values were reviewed and were updated based on the new information or changed conditions resulting in some changes to the specific values identified for each river.

Results of the Eligibility Review for Previously Evaluated Rivers
Previous Eligibility Reaffirmed

Convict Creek, Segment 1 (River/Segment GIS Number: 1.03)

Location:

- County: Mono County
- Beginning Point Description: Headwaters
- End Point Description: Convict Lake

Mileage:

- Studied: 7.0 miles
- Eligible: 7.0 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORVs): The 1991 documentation (3/22/91 memo) determined ORVs for scenery and geology. The 2015 review noted high quality aspen and cottonwood stands, largely maintained by strong water flow with frequent flooding regime. The interdisciplinary team determined that Convict Creek has ORVs for scenery, geology, and "other."

- **Scenery**
  - Description: Scenic creek canyon with numerous lakes and outstanding geologic features, and the Sierra Crest as a backdrop.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for nonnative trout species, and camping occur along the creek; these recreation opportunities are not unique or rare within the region of comparison, but do attract visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Prehistoric**
  - Description: Numerous prehistoric sites known.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The sites known are not usual and not associated with any well-established themes of significance for the Inyo.
- **Geology**
  - Description: widely varied geologic formations providing visible evidence of geologic processes spanning 150 million years: Mount Morrison roof pendant; Sevenhall cliff; Bright Dot formation; Mount Baldwin Marble; Mildred Lake Hornfelds; highly visible from trail.
  - ORV Finding: Geology is an outstandingly remarkable value.

- **Other (Ecological and Botanical Values)**
  - Riparian corridor supports numerous rare plants, including moonworts, snow willow, Rolland's bulrush, Bellardi bog sedge, shortfruit willow, and kinnikinnik; Outstanding carbonate and metamorphic formations (roof pendant), with unique plant communities and rare species.
  - ORV Finding: Other (Botanical) is an outstandingly remarkable value

Summary of Eligibility Findings: Convict Creek from the Headwaters to Convict Lake is determined to be eligible. It is free flowing. Scenery, recreation, geology and other - botanical are outstandingly remarkable values.

Classification Findings:

Located within John Muir Wilderness, Convict Creek, segment 1 has been given a classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive. Little or no evidence of human activity.
- Accessibility: Generally inaccessible, except by trail.
- Water Quality: Unknown

Cottonwood Creek (Sierra), Segment 1 (River/Segment GIS Number: 1.04.1 – 1.04.2)

Location:

- County: Inyo County
- Beginning Point Description: Headwaters
- End Point Description: Southeast side of Forest Road 16S02 (Horseshoe Meadows Road)

Mileage:

- Studied: 4.7 miles
- Eligible: 4.7 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1991 documentation (3/22/91 memo) noted that Cottonwood Creek has ORVs for scenery, recreation, and fisheries.

- **Scenery**
  - Scenic forested creek corridor with breaks with vistas of nearby Sierra Crest, transects large, open Horseshoe Meadows.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for golden trout species, and camping occur along the creek. These recreation opportunities are not unique or rare within the region of comparison, but do attract visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.

- **Geology**
  - Description: Large, high elevation meadow with little evidence of glaciation is unique in the region of comparison.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **Fisheries (Habitat) and (Fish Population):**
  - Description: Pristine environment for fishing for naturally reproducing golden trout. Only stream population of golden trout in the area.
  - ORV Finding: Fish is an outstandingly remarkable value.
- **History:**
  - Description: The upper segment is associated with Golden Trout, the earliest recreation resort in this portion of the Sierras. The lower segment is associated with numerous sites associated with late 1800s logging to support the Cerro Gordo Mine charcoal kilns.
  - ORV Finding: History is an outstandingly remarkable value. NRHP eligible sites are associated with unique themes of significance for the Inyo.

Summary of Eligibility Findings: This segment is determined to be eligible. It is free flowing. Scenery, recreation, geology, fish (habitat), fish (population) and history are outstandingly remarkable values.

Classification Findings:

Based on the current condition of developments and shoreline access, Segment 1 from the Headwaters to the wilderness boundary has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Upper section is essentially primitive, with little or no evidence of human activity.
- Accessibility: Upper section is generally inaccessible, except by trail.
- Water Quality: Unknown.

Cottonwood Creek, Segment 2 (River/Segment GIS Number: 1.04.3)

Location:

- County: Inyo County
- Beginning Point Description: Southeast side of Forest Road 16S02
- End Point Description: Los Angeles Department of Water and Power (Los Angeles Department of Water and Power) land east of the Old Cottonwood Sawmill site.

Mileage:

- Studied: 1.4 miles
- Eligible: 1.4 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: Little information was noted from the 1990s study for Cottonwood Creek. The 3/22/91 memo noted campsites along the road on Los Angeles Department of Water and Power (Los Angeles Department of Water and Power) land and it was determined to have ORVs for recreation.

- **Scenery**
  - Description: Largely forested area, with occasional openings and views of Trail peak. Along the roaded portion of the creek, stock corrals and fences, and a snow survey cabin are visible from the creek.
  - ORV Finding: Scenery is not an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for golden trout species, and camping occur along the creek; these recreation opportunities are not unique or rare within the region of comparison, but do attract visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Geologic formations nearby include trail peak and Owens point, no unique features within the corridor.
  - ORV Finding: Geology is not an outstandingly remarkable value.
- **Fisheries (Population):**
  - Description: Unique fishing experience for fishing for naturally reproducing golden trout in an area easily accessed by road.
  - ORV Finding: Fisheries is an outstandingly remarkable value.
- **History**
  - Description: LA Aqueduct.
  - ORV Finding: History is an outstandingly remarkable value. Documented NRHP eligible sites are importantly associated with the river and unique Forest theme of developments related historic water extraction.
- **Prehistoric**
  - Description: Numerous prehistoric sites known.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The few sites known are not usual and not associated with any well-established themes of significance for the Inyo.

Summary of Eligibility Findings: Cottonwood Creek from Forest Road 16S02 to Los Angeles Department of Water and Power land is determined to be eligible. It is free flowing. Recreation, history and fish (population) are outstandingly remarkable values.

Classification Findings:

This segment has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Free of impoundment
- Shoreline Development: Evidence of human activity.
- Accessibility: Readily accessible by road.
- Water Quality: Unknown

Cottonwood Creek, Segment 3 (River/Segment GIS Number: 1.04.4)

Location:

- County: Inyo County
- Beginning Point Description: Los Angeles Department of Water and Power (Los Angeles Department of Water and Power) land east of the Old Cottonwood Sawmill site.
- End Point Description: Golden Trout Wilderness boundary

Mileage:

- Studied: 3.8 miles
- Eligible: 3.8 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: Little information was noted from the 1990s study for Cottonwood Creek.

- **Scenery**
  - Description: Largely forested area, with openings and views of Owens dry lake and the Owens Valley.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for golden trout, and (very little) camping occur along the creek; these recreation opportunities are not unique or rare within the region of comparison. This segment of Cottonwood Creek is remote, overgrown, access to the creek is limited due to the steep canyon walls, and does not draw visitation from outside of the region of comparison.
  - ORV Finding: Recreation is not an outstandingly remarkable value.
- **Geology**
  - Description: No unique features within the creek corridor.
  - ORV Finding: Geology is not an outstandingly remarkable value.
- **History**
  - Description: Documented sites include Colonel Stevens Cottonwood sawmill and flume.

- ♦ ORV Finding: History is an outstandingly remarkable value. Documented sites are associated with locally significant and unique themes of early historic resource extraction and processing.

- **Fisheries (Population)**
  - ♦ Description: Unique fishing experience for fishing for naturally reproducing golden trout in an area easily accessed by road.
  - ♦ ORV Finding: Fish is an outstandingly remarkable value

Summary of Eligibility Findings: Cottonwood Creek from Los Angeles Department of Water and Power to wilderness boundary is determined to be eligible. It is free flowing. Scenery, history, and fish (population) are outstandingly remarkable values.

Classification Findings:

This segment has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Minimal historic impoundments associated with the Cottonwood Creek power plant downstream, and the Sawmill operations upstream.
- Shoreline Development: little evidence of human activity.
- Accessibility: Accessible by road at both termini.
- Water Quality: Unknown

Cottonwood Creek, Segment 4 (River/Segment GIS Number: 1.04.5)

Location:

- County: Inyo County
- Beginning Point Description: Golden Trout Wilderness boundary
- End Point Description: Intake in Section 27 just east of Forest Service Road 17S01

Mileage:

- Studied: 2.1 miles
- Eligible: 2.1 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: Little information was noted from the 1990s study for this segment of Cottonwood Creek.

- **Scenery**
  - ♦ Description: Largely forested area, with openings and views of Owens dry lake and the Owens Valley
  - ♦ ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - ♦ Description: Recreation opportunities, such as hiking, fishing for golden trout, and camping occur along the creek; these recreation opportunities are not unique or rare within the region of comparison. Likely not attracting visitors from outside of the

region of comparison. This segment of Cottonwood Creek is in close proximity to National Forest Road 17S01.

- ORV Finding: Recreation is not an outstandingly remarkable value.

- **Geology**
  - Description: No unique features within the creek corridor.
  - ORV Finding: Geology is not an outstandingly remarkable value.
- **Fisheries (Population):**
  - Description: Unique fishing experience for fishing for naturally reproducing golden trout in an area easily accessed by road.
  - ORV Finding: Fisheries is an outstandingly remarkable value.
- **History**
  - Description: Documented sites include a variety of historic Los Angeles Department of Water and Power developments, such as a caretaker's cabin and water diversions.
  - ORV Finding: History is an outstandingly remarkable value. Documented sites are associated with regionally significant theme of water extraction on the Inyo.
- **Prehistoric**
  - Description: Numerous NRHP eligible prehistoric sites are known, including one where a regional point style was first identified (Cottonwood).
  - ORV Finding: Prehistory is an outstandingly remarkable value. Many known sites are NRHP eligible or have a unique significance for the Inyo.

Summary of Eligibility Findings: Cottonwood Creek from the Golden Trout Wilderness boundary to the intake in Section 27 is eligible. It is free flowing. Scenery and fish (population), prehistory and history are outstandingly remarkable values.

Classification Findings:

This segment has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Impoundments associated with the Cottonwood Creek power plant.
- Shoreline Development: Cottonwood power plant and associated buildings visible from the creek, established dispersed camping along the creek and adjacent to the road.
- Accessibility: Accessible by road.
- Water Quality: Unknown

Golden Trout Creek, Segment 1 (River/Segment GIS Number: 1.07)

Location:

- County: Tulare County
- Beginning Point Description: Headwaters above Big Whitney Meadows
- End Point Description: Confluence with the Kern River

Mileage:

- Studied: 19 miles
- Eligible: 19 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1991 documentation (3/22/91 memo) noted, Volcano Falls (about 100 feet high), natural rock bridge, volcanic domes, lava flows, vegetative diversity (from alpine meadows to chinquapin, manzanita), tunnel feud in 1880s (water diversion to serve for irrigation for farmers in what is the area covered by Lake Isabella) golden trout fishery and determined ORVs for scenery, geology, and fisheries. The 2015 interdisciplinary team review noted, least compromised golden trout populations. The findings were consistent with the 1991 documentation.

- **Scenery**
  - Description: Highly scenic creek corridor, with vegetative diversity from alpine meadows to chinquapin and manzanita, with Sierra Crest as back drop, woodlands and unique geological formations.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for golden trout, and camping occur along the creek; these recreation opportunities are not unique or rare within the region of comparison. These are attracting visitors from outside of the region of comparison, but not to the same degree as other creeks within the region of comparison. Golden Trout Creek was the home of one of California's earliest water wars at Tunnel Meadows, where it has been reported that a clandestine tunnel was built to transfer water from the Owens Valley watershed to the Kern River Watershed.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Evidence of unique volcanic activity including 100 foot-high Volcano Falls natural rock bridge, volcanic domes, and lava flows.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **History**
  - Description: Guard station, cow camps and snow survey shelter. The past evaluation speaks to the corridor being the home of one of California's earliest water wars at Tunnel Meadows, where a clandestine tunnel was attempted to transfer water from the Owens Valley watershed to the Kern River Watershed.
  - ORV Findings: History is an outstandingly remarkable value. At least one site (failed tunnel) is associated with a rather unique theme of significance for the Inyo.
- **Prehistory**
  - Description: Two prehistoric sites known.

- ♦ ORV Findings: Prehistory is not an outstandingly remarkable value. The few sites known are not usual and not associated with any well-established themes of significance for the Inyo.

- **Fisheries (Population):**
  - ♦ Description: Least compromised population of Golden Trout occurs here; this population is significant to the species ability to thrive in the future.
  - ♦ ORV Finding: Fish (population) is an outstandingly remarkable value.
- **Fisheries (Habitat):**
  - ♦ Description: River offers suitable habitat requirements for the Golden Trout population occurring in this river. This habitat is significant for the species to thrive in this area.
  - ♦ ORV Finding: Fish (Habitat) is an outstandingly remarkable value.

Summary of Eligibility Findings: Golden Trout Creek from the Headwaters to the Kern River is determined to be eligible. It is free flowing. Scenery, recreation, geology, history, fish (habitat) and fish (population) are outstandingly remarkable values.

Classification Findings:

Located within Golden Trout Wilderness, Golden Trout Creek, Segment 1 has been given a classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive. Little or no evidence of human activity.
- Accessibility: Generally inaccessible, except by trail.
- Water Quality: Unknown

Hot Creek, Segment 2 (River/Segment GIS Number: 1.09.1)

Location:

- County: Mono County
- Beginning Point Description: Intersection of stream and Forest Road 3S45G
- End Point Description: Fish Hatchery

Mileage:

- Studied: 4.4 miles
- Eligible: 4.4 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values:

- **Geology**
  - ♦ Description: Unique geologic features and hot springs.
  - ♦ ORV Finding: Geology is an outstandingly remarkable value.

- **Prehistory:**
  - Description: Dense prehistoric sites associated with regionally significant obsidian procurement, processing, habitation and trade.
  - ORV Finding: Prehistory is an outstandingly remarkable value. Large number of documented sites associated with unique Forest theme.
- **Other (Ecological and Botanical Values)**
  - Extensive meadows and alkali flats in the river floodplain along with the rare plant meadow hawksbeard.
  - ORV Finding: Other (Botanical) is an outstandingly remarkable value.

Summary of Eligibility Findings: Hot Creek, Segment 2, is determined to be eligible. It is free flowing. Geology, prehistory, and other (botanical) are outstandingly remarkable values.

Classification Findings: Hot Creek, Segment 2 has been given a classification of "recreational" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Some development.
- Accessibility: Readily accessible by road.
- Water Quality: Unknown

Hot Creek, Segment 3 (River/Segment GIS Number: 1.09.2)

Location:

- County: Mono County
- Beginning Point Description: Fish Hatchery
- End Point Description: national forest boundary

Mileage:

- Studied: 2.9 miles
- Eligible: 2.9 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values:

- **Scenery**
  - Highly Scenic creek corridor with dramatic views of the Sierra Crest, Scenic geologic formations.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Primarily a day hiking and fishing destination, world class fishery and views of the remnants of the Long Valley Caldera provide a unique recreation setting. There are opportunities for class II whitewater rafting during peak spring run-off.

- ♦ ORV Finding: Recreation is an outstandingly remarkable value.

- **Geology**
  - ♦ Remnants of the Long Valley Caldera are evident in the form of unique geological features including thermal pools, surface thermal flow and fumarols.
  - ♦ ORV Finding: Geology is an outstandingly remarkable value.
- **Fisheries (Population):**
  - ♦ Wild Trout Fishery offers a world-class Blue Ribbon Fishery
  - ♦ ORV Finding: Fish (population) is an outstandingly remarkable value.
- **Fisheries (Habitat):**
  - ♦ River habitat offers suitable live-stage needs for trout species.
  - ♦ ORV Finding: Fish (habitat) is an outstandingly remarkable value.
- **Prehistory:**
  - ♦ Description: Dense prehistoric sites associated with regionally significant obsidian procurement, processing, habitation and trade.
  - ♦ ORV Finding: Prehistory is an outstandingly remarkable value. Large number of documented sites associated with unique Forest theme.
- **Other (Ecological and Botanical Values)**
  - ♦ Extensive meadows and alkali flats in the river floodplain along with the rare plant meadow hawksbeard.
  - ♦ ORV Finding: Other (Botanical) is an outstandingly remarkable value.

Summary of Eligibility Findings: Hot Creek from the fish hatchery to the national forest boundary is determined to be eligible. It is free flowing. Scenery, recreation, geology, fish (population), fish (habitat), prehistory, and other (botanical) are outstandingly remarkable values.

Classification Findings:

Hot Creek, Segment 3 has been given a classification of "recreational" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Some development.
- Accessibility: Readily accessible by road.
- Water Quality: Unknown

Laurel Creek, Segment 1 (River/Segment GIS Number: 1.11)

Location:

- County: Mono County
- Beginning Point Description: Wilderness boundary

- End Point Description: Los Angeles Department of Water and Power (Los Angeles Department of Water and Power) property

Mileage:

- Studied: 3.8 miles
- Eligible: 3.8 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery, recreation, geology, and fisheries.

- **Scenery**
  - Description: Highly scenic canyon with distinctive riparian vegetation
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for golden trout, and camping occur along the creek; these recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Visible unique geologic features in canyon walls including very visible evidence of glaciation.
  - ORV Determination: Geology is an outstandingly remarkable value.
- **History**
  - Description: One documented site.
  - ORV Finding: History is not an outstandingly remarkable value. History was not determined an ORV because the one known site is not known to be unusual or associated with any well-established themes of unique significance for the Inyo.
- **Prehistory:**
  - Description: Two sites known.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The few sites known are not usual and not associated with any well-established themes of significance for the Inyo.
- **Fisheries (Population/Habitat):**
  - Description: Golden trout are found within Laurel Lake, but not downstream in this stream segment nor does the stream provide exceptionally high quality habitat for fish species
  - ORV Finding: Fish (population/habitat) is not an outstandingly remarkable value.

- **Other (Botanical):**
  - Description: A rare botanical species, *Salix brachycarpa,* occurs in along this segment.
  - ORV Finding: Other (Botanical) is not an outstandingly remarkable value because this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Summary of Eligibility Findings: Laurel Creek from the wilderness boundary to Los Angeles Department of Water and Power property is eligible. It is free flowing. Scenery, recreation and geology are outstandingly remarkable values.

Classification Findings:

Laurel Creek has been given a preliminary classification of "scenic" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive. Little or no evidence of human activity.
- Accessibility: Generally accessible by 4-wheel-drive road.
- Water Quality: Unknown

Lee Vining Creek, Segment 1 (River/Segment GIS Number: 1.12.1)

Location:

- County: Mono County
- Beginning Point Description: Headwaters tributaries
- End Point Description: Harvey Monroe Hall Research Natural Area (RNA) boundary

Mileage:

- Studied: 1.4 miles
- Eligible: 1.4 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: Lee Vining Creek, segment 1was determined to have ORVs for scenery in the 1990s.

- **Scenery**
  - Description: Highly scenic canyon with views of several towering peaks and granitic walls
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for planted rainbow and brook trout, and camping occur along the creek; these recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.

- **Geology**
  - Description: Glaciated Alpine Peaks, with Conness Glacier at the headwaters
  - ORV Finding: Geology is an outstandingly remarkable value.

Summary of Eligibility Findings: Lee Vining Creek from the Headwaters to the RNA boundary is determined to be eligible. It is free flowing. Scenery, recreation, and geology are outstandingly remarkable values.

Classification Findings:

Lee Vining Creek, Segment 1 has been given a classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive. Little or no evidence of human activity.
- Accessibility: Generally inaccessible, except by trail.
- Water Quality: Unknown

Lee Vining Creek, (Upper Lee Vining Creek), Segment 2 (River/Segment GIS Number: 1.12.2)

Location:

- County: Mono County
- Beginning Point Description: Harvey Monroe Hall Research Natural Area (RNA) boundary
- End Point Description : Greenstone Lake

Mileage:

- Studied: 0.2 miles
- Eligible: 0.2 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 3/22/91 memo noted campgrounds, planted rainbow and brook trout, and trail to historic site. The 1990s study identified ORVs for scenery, geology, and historic sites.

- **Scenery**
  - Description: Highly scenic meadow systems below granite peaks.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for planted rainbow and brook trout, and camping occur along the creek; these recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison. Hiking opportunities to Bennettville mining center within proximity of the creek are a unique recreation opportunity.

- ♦ ORV Finding: Recreation is an outstandingly remarkable value.

- **Geology**
  - ♦ Description: Highly visible glacial feature (Conness Glacier).
  - ♦ ORV Finding: Geology is an outstandingly remarkable value.
- **Fisheries:**
  - ♦ Description: Planted rainbow and brook trout fishery, no native fishery.
  - ♦ ORV Finding: Fisheries is not an outstandingly remarkable value

Summary of Eligibility Findings: Lee Vining Creek (Segment 2) from Harvey Monroe Hall Research Natural Area (RNA) boundary to Greenstone Lake is eligible. It is free flowing. Scenery, recreation and geology are outstandingly remarkable values.

Classification Findings:

Upper Lee Vining Creek (Segment 2) has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive. Little or no evidence of human activity.
- Accessibility: Generally accessible by 4-wheel-drive road.
- Water Quality: Unknown

Lee Vining Creek (Lower Lee Vining Creek), Segment 3 (River/Segment GIS Number: 1.12.3)

Location:

- County: Mono County
- Beginning Point Description: Saddlebag Lake
- End Point Description: Highway 120

Mileage:

- Studied: 3.0 miles
- Eligible: 3.0 miles

Eligibility Findings:

Determination of Free Flow: Controlled at the dam at Saddlebag Lake; free-flowing until inlet at Ellery Lake and Highway 120.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery, recreation, history and geology. No historic sites have been documented in this reach, but the past evaluation speaks to possible themes of early mining and travel.

- **Scenery**
  - ♦ Description: Highly scenic canyon with distinctive riparian vegetation.
  - ♦ ORV Finding: Scenery is an outstandingly remarkable value.

- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for planted rainbow and brook trout occur along the creek; these recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison. Although Bighorn sheep are not in the river corridor, the potential to view them from the river corridor is a unique recreation opportunity.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Highly visible glacial feature (Conness Glacier).
  - ORV Finding: Geology is an outstandingly remarkable value.
- **Prehistory**
  - Description: One prehistoric site is located along this segment.
  - ORV Finding: Prehistory is not an outstandingly remarkable value because the site was not unusual and not associated with any well-established themes of unique significance for the Inyo.
- **Fisheries (Population and Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery.
  - ORV Finding: Fisheries is not an outstandingly remarkable value.
- **Other (Botanical):**
  - Description: Moist meadow is present within the river corridor.
  - ORV Finding: Other (Botanical) is not an outstandingly remarkable value because this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Summary of Eligibility Findings: Lee Vining Creek from Saddlebag Lake to Highway 120 is eligible. It is free-flowing. Scenery, recreation and geology are outstandingly remarkable values.

Classification Findings:

Upper Lee Vining Creek (Segment 3) has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Some development. Substantial evidence of human occupation, with several campgrounds occurring along this segment.
- Accessibility: Readily accessible by road. National Forest Road 1N04 parallels the segment to the junction at Highway 120.
- Water Quality: Unknown

Lee Vining Creek (Lower Lee Vining Creek), Segment 4 (River/Segment GIS Number: 1.12.4)

Location:

- County: Mono County
- Beginning Point Description: Southern California Edison Powerhouse
- End Point Description: Los Angeles Department of Water and Power holding pond

Mileage:

- Studied: 6.0 miles
- Eligible: 6.0 miles

Eligibility Findings:

Determination of Free Flow: Controlled at Southern California Edison's powerhouse; diverted by Los Angeles Department of Water and Power for irrigation purposes downstream; diversion for the Lee Vining Public Utility for domestic water use; diversion at lower end for power purposes. Generally free flowing in between.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery, recreation, and geology.

- **Scenery**
  - Description: Highly scenic canyon with distinctive riparian vegetation.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for planted rainbow and brook trout occur along the creek; these recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison. Although bighorn sheep are not in the river corridor, the potential to view them from the river corridor is a unique recreation opportunity.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Visible geologic features within canyon, including Conness Glacier
  - ORV Finding: Geology is an outstandingly remarkable value.
- Preh**istory**
  - Description: A few sites documented.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The few sites known are not usual and not associated with any well-established themes of significance for the Inyo.
- **Fisheries (Population and Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery.
  - ORV Finding: Fisheries is not an outstandingly remarkable value.

- **Other (Botanical):**
  - Description: Moist meadow is present within the river corridor.
  - ORV Finding: Other (Botanical) is not an outstandingly remarkable value because this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Summary of Eligibility Findings: Lee Vining Creek (Section 4) from SCE powerhouse to Los Angeles Department of Water and Power diversion pond is eligible. It is free flowing. Scenery, recreation, and geology are outstandingly remarkable values.

Classification Findings:

Lee Vining Creek (Segment 4) has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Some development. Substantial evidence of human occupation with the presence of multiple campgrounds and a SCE powerhouse.
- Accessibility: Generally accessible by road. Forest Service road parallels the segment, as well as Highway 395.
- Water Quality: Unknown

Lone Pine Creek/North Fork Lone Pine Creek Segment 1 (River/Segment GIS Number: 1.13, 1.23)

Location:

- County: Inyo County
- Beginning Point Description: North Fork and South Fork Headwaters
- End Point Description: John Muir Wilderness boundary

Mileage:

- Studied: 4.7 miles
- Eligible: 4.7 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 3/22/91 memo noted extremely popular recreation area and determined ORVs for scenery and recreation. The 1/21/15 interdisciplinary team review noted recreation opportunity and use is tied to Mt. Whitney and designated wilderness, which is not necessarily river related.

- **Scenery**
  - Description: Highly scenic canyon with views of several towering peaks and granitic walls.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, and camping occur along the creek; these recreation opportunities are not unique or rare within the region of

comparison, but are attracting visitors from outside of the region of comparison. Hiking opportunities to Mt. Whitney, within proximity of the creek are a unique recreation opportunity.

- ♦ ORV Finding: Recreation is an outstandingly remarkable value.

- **Geology**
  - ♦ Description: Classic example of alluvial fan formation (geomorphology).
  - ♦ ORV Finding: Geology is an outstandingly remarkable value.
- **Fisheries (Population and Habitat):**
  - ♦ Description: Rainbow and brook trout are planted here. There is no native fishery.
  - ♦ ORV Finding: Fisheries is not an outstandingly remarkable value.

Summary of Eligibility Findings: Lone Pine Creek (Segment 1) from North Fork and South Fork headwaters to the John Muir Wilderness boundary is eligible. It is free flowing. Scenery, recreation, and geology are outstandingly remarkable values.

Classification Findings:

Lone Pine Creek (segment 1) has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive.
- Accessibility: Accessible by trail.
- Water Quality: Unknown

Mammoth Creek, Segment 5 (River/Segment GIS Number: 1.15.1)

Location:

- County: Mono County
- Beginning Point Description: Twin Lakes
- End Point Description: Sherwin Campground

Mileage:

- Studied: 4.5 miles
- Eligible: 4.5 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Recreation**
  - ♦ Description: Area is accessible for day-use, hiking, fishing, bike-riding, and camping.
  - ♦ ORV Finding: Recreation is not an outstandingly remarkable value.

- **History**
  - Description: High concentration of documented historic sites, including administrative buildings, sawmill foundation, refuse scatters, and historic sites related to recreation and resource extraction.
  - ORV Finding: History is an outstandingly remarkable value. Large numbers of historic sites are documented that are associated with Forest significant themes of historic settlement, resource extraction and development.
- **Prehistory**
  - Description: Dense concentration of documented prehistoric sites associated with regionally significant obsidian quarry and processing areas.
  - ORV Finding: Prehistory is an outstandingly remarkable value. Unusually large numbers of sites associated with regionally significant themes of prehistoric obsidian extraction, processing and trade.

Summary of Eligibility Findings: Mammoth Creek from Twin Lakes to Sherwin Campground is eligible. It is free flowing. History and Prehistory are outstandingly remarkable values.

Classification Findings: Mammoth Creek, Segment 5 has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Some existing impoundment or diversion.
- Shoreline Development: Some development, substantial evidence of human activity.
- Accessibility: Accessible by road.
- Water Quality: Unknown.

Mammoth Creek, Segment 6 (River/Segment GIS Number: 1.15.2)

Location:

- County: Mono County
- Beginning Point Description: Sherwin Campground
- End Point Description: South of Hot Creek by 0.02 miles

Mileage:

- Studied: 2.4 miles
- Eligible: 2.4 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values (ORV):

- **Recreation**
  - Description: Area offers camping, biking, fishing, and off-highway vehicle use along Forest designated routes.
  - ORV Finding: Recreation is not an outstandingly remarkable value.

- **Prehistory**
  - Description: Dense concentration of documented prehistoric sites associated with regionally significant obsidian quarry and processing areas.
  - ORV Finding: Prehistory is an outstandingly remarkable value. Unusually large numbers of sites associated with regionally significant themes of prehistoric obsidian extraction, processing and trade.
- **Other (Botanical):**
  - Description: Moist meadow is present within the river corridor.
  - ORV Finding: Other (Botanical) is not an outstandingly remarkable value because this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Summary of Eligibility Findings: Mammoth Creek from Sherwin Campground to 0.02 miles south of Hot Creek is eligible. It is free flowing. Prehistory is an outstandingly remarkable value.

Classification Findings: Mammoth Creek, Segment 6 has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Some existing impoundment or diversion.
- Shoreline Development: Some development, substantial evidence of human activity.
- Accessibility: Readily accessible by road.
- Water Quality: Unknown.

McGee Creek, Segment 1 (River/Segment GIS Number: 1.16)

Location:

- County: Mono County
- Beginning Point Description: Headwaters
- End Point Description: Wilderness boundary

Mileage:

- Studied: 6.7 miles
- Eligible: 6.7 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery and geology.

- **Scenery**
  - Description: Highly scenic canyon. The diversity of vegetation and watercourse, and unique geology, including different striations of minerals within the canyon walls, is easily identifiable from trail.
  - ORV Finding: Scenery is an outstandingly remarkable value.

- **Recreation**
  - Description: Recreation opportunity is primarily hiking and camping. Very popular hiking trail. Recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Unique geology visible from trail; waterfalls on both sides of the canyon; old sierra rocks, roof pendants
  - ORV Finding: Geology is an outstandingly remarkable value.
- **History**
  - Description: Prospects and a culvert are documented.
  - ORV Finding: History is not an outstandingly remarkable value. The few sites known are not usual and not associated with any well-established themes of significance for the Inyo.
- **Prehistory**
  - Description: Several prehistoric sites recorded.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The few sites known are not usual and not associated with any well-established themes of significance for the Inyo.
- **Wildlife (Population)**
  - Description: Yosemite toad populations occur in the high elevations of this segment.
  - ORV Finding: Wildlife (population) is not an ORV because breeding populations are not know to occur within the river corridor.
- **Fisheries (Population and Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery.
  - ORV Finding: Fisheries is not an outstandingly remarkable value.
- **Other (Botanical):**
  - Description: Aspen are present within the river corridor.
  - ORV Finding: Other (Botanical) is not an outstandingly remarkable value because this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Summary of Eligibility Findings: McGee Creek from Headwaters to wilderness boundary is eligible. It is free flowing. Scenery, recreation, and geology are outstandingly remarkable values.

Classification Findings:

McGee Creek has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive.

- Accessibility: accessible by trail.
- Water Quality: Unknown

Middle Fork San Joaquin River (River/Segment GIS Number: 1.17)

Location:

- Ranger District: Mammoth
- County: Madera
- Beginning Point Description: Headwaters are from an unnamed lake southwest of Thousand Island Lake
- End Point Description: Middle Fork San Joaquin River at the northeast end of Thousand Island Lake
- Special Area: Ansel Adams Wilderness on the Inyo National Forest

Mileage:

- Studied: 3.5
- Eligible: 3.5

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values:

- **Scenery**
  - Description: Area offers views of large, naturally occurring, high alpine lakes and high Sierra peaks.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: fishing for unique fish, natural occurring lakes, areas of rock climbing near headwaters, accessed by Pacific Crest Trail / John Muir Trail
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Granitic formations at high elevations.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **Wildlife (Population)**
  - Description: Yosemite toad population have been documented in the upland and meadow habitats within the river corridor.
  - ORV Finding: Wildlife (population) is not an ORV because the river does not contribute to the occurrence of the Yosemite toad.

- **Wildlife (Habitat)**
  - Description: Upland and meadow habitats suitable for amphibian species occur within the river corridor.
  - ORV Finding: Wildlife (habitat) is not an ORV because the river is not contributing to the presence of these habitats.
- **Prehistory**
  - Description: One prehistoric site recorded.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The one site known is not usual and not associated with any well-established themes of significance for the Inyo.

Summary of Eligibility Findings: This segment of the Middle Fork of the San Joaquin River is determined to be eligible. It is free flowing. Scenery, geology, and recreation are outstandingly remarkable values.

Classification Findings:

Middle Fork San Joaquin River has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: No development
- Accessibility: Nonmotorized trails.
- Water Quality: Unknown

Mill Creek, Segment 1 (River/Segment GIS Number: 1.18.1, 1.18.2)

Location:

- County: Mono County
- Beginning Point Description: Headwaters
- End Point Description: Wilderness boundary

Mileage:

- Studied: 4.0 miles
- Eligible: 4.0 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery and geology.

- **Scenery**
  - Description: Highly scenic canyon. Extremely scenic due to the diversity both in the watercourse and in the surrounding terrain and vegetation. The watercourse ranges from lakes to steep-dropping waterfalls, fast-moving cascades, and braided meadows.

Dramatic geologic evidence throughout the canyon adds to the outstanding scenic quality of the river corridor.

- ORV Finding: Scenery is an outstandingly remarkable value.

- **Recreation**
  - Description: Recreation opportunity is primarily hiking and camping. Very popular hiking trail. Recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Geology is highly scenic due to the majesty of the canyon and the visible evidence of glaciation. Conness Glacier and a large portion of the sierra crest is visible from the top of the canyon.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **Wildlife (Population)**
  - Description: Yosemite toad population have been documented in the upland and meadow habitats within the river corridor.
  - ORV Finding: Wildlife (population) is not an ORV because the river does not contribute to the occurrence of the Yosemite toad.
- **Wildlife (Habitat)**
  - Description: Upland and meadow habitats suitable for amphibian species occur within the river corridor.
  - ORV Finding: Wildlife (habitat) is not an ORV because the river is not contributing to the presence of these habitats.
- **Fisheries:**
  - Description: Rainbow and brook trout are planted here. There is no native fishery.
  - ORV Finding: Fisheries is not an outstandingly remarkable value.
- **Other (Botanical):**
  - Description: The presence of a rare species, *Kobresia myosuroides,* occurs within the river corridor.
  - ORV Finding: Other (Botanical) is not an outstandingly remarkable value because this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Summary of Eligibility Findings: Mill Creek (segment 1) from headwaters to wilderness boundary is eligible. It is free flowing. Scenery, recreation, and geology are outstandingly remarkable values.

Classification Findings:

Located within the John Muir Wilderness, it has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.

- Shoreline Development: Essentially primitive.
- Accessibility: Accessible by trail.
- Water Quality: Unknown

Mill Creek (Segment 2) (River/Segment GIS Number: 1.18.3)

Location:

- County: Mono County
- Beginning Point Description: Wilderness boundary
- End Point Description: Private Property

Mileage:

- Studied: 1.4 miles
- Eligible: 1.4 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery, geology, and history related to early Hess and Parrot mining activity (though no sites have been documented). The current review assessed mining sites as importantly related to the location of mineral discoveries rather than to streams.

- **Scenery**
  - Description: Highly scenic due to the majesty of the canyon and the visible evidence of glaciation. Dramatic geologic evidence throughout the canyon adds to the outstanding scenic quality of the river corridor.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunity is primarily hiking and camping and picnicking along the creek. Very popular hiking trail. These recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison. Unique opportunities around visitation of Hess and Parrott Mine sites.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Geology is highly scenic due to the majesty of the canyon and the visible evidence of glaciation. Conness Glacier and a large portion of the sierra crest is visible from the top of the canyon.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **Prehistory**
  - Description: One prehistoric site recorded.

- ♦ ORV Finding: Prehistory is not an outstandingly remarkable value. The one known site is not usual and not associated with any well-established themes of significance for the Inyo.

- **Fisheries (Population and Habitat):**
  - ♦ Description: Rainbow and brook trout are planted here. There is no native fishery.
  - ♦ ORV Finding: Fisheries is not an outstandingly remarkable value.
- **Other (Botanical):**
  - ♦ Description: Aspen and moist meadows are present within the river corridor.
  - ♦ ORV Finding: Other (Botanical) is not an outstandingly remarkable value because this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Summary of Eligibility Findings: Mill Creek (segment 2) from the wilderness boundary to private property is eligible. It is free flowing. Scenery, recreation, and geology are outstandingly remarkable values.

Classification Findings:

- Mill Creek (segment 2) has been given a preliminary classification of "scenic" based on the following:
- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive.
- Accessibility: Accessible by trail.
- Water Quality: Unknown

Mill Creek (Segment 3) (River/Segment GIS Number: 1.18.4)

Location:

- County: Mono County
- Beginning Point Description: Private Property
- End Point Description: Lundy Lake

Mileage:

- Studied: 0.8 miles
- Eligible: 0.8 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery and history related to early Hess and Parrot mining activity (though no sites have been documented). The current review assessed mining sites as importantly related to the location of mineral discoveries rather than to streams.

- **Scenery**
  - Description: Highly scenic canyon. Aspen stands provide shade and fall colors. There are a few scenic overlooks of Lundy Canyon and Lundy Lake as a significant scenic spot.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunity is primarily hiking and camping and picnicking along the creek. Popular hiking trail. These recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison. Unique opportunities around visitation of historic mining sites.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Geology is highly scenic because of the majesty of the canyon and the visible evidence of glaciation. Conness Glacier and a large portion of the sierra crest is visible from the top of the canyon.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **History**
  - Description: One linear historic feature.
  - ORV Finding: History is not an outstandingly remarkable value. The one known site is not known to be usual and or associated with any well-established themes of significance for the Inyo.
- **Prehistory**
  - Description: Two prehistoric sites.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The few sites known are not usual or associated with any well-established themes of significance for the Inyo.
- **Fisheries (Population and Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery.
  - ORV Finding: Fisheries is not an outstandingly remarkable value.

Summary of Eligibility Findings: Mill Creek (Segment 3) from private property to Lundy Lake property is eligible. It is free flowing. Scenery, recreation, and geology are outstandingly remarkable values.

Classification Findings:

Mill Creek (segment 3) it has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive.
- Accessibility: accessible by trail.
- Water Quality: Unknown

North Fork Big Pine Creek, Segment 1 (River/Segment GIS Number: 1.22.1-1.22.2)

Location:

- County: Inyo County
- Beginning Point Description: Headwaters
- End Point Description: Wilderness boundary

Mileage:

- Studied: 5.5 miles
- Eligible: 5.5 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values:

- **Scenery**
  - Description: Scenery within this segment of the river showcases high Sierra peaks, including the Palisades Glacier, and alpine lakes which are light blue because of the glacial run-off.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for nonnative trout species, and camping occur along the creek; these recreation opportunities are not unique or rare within the region of comparison, but do attract visitors from outside of the region of comparison. Lon Chaney Cabin was designed by Paul Revere Williams, the first African American inducted in the American Association of Architects. The cabin is eligible for the National Register of Historic Places due to its architectural distinction and associations with architect Paul Revere Williams and actor Lon Chaney. Although not listed on the National Register, visiting this cabin is a unique recreation experience.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Palisades Glacier in the headwaters which is a unique glacial feature.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **History**
  - Description: National Register Eligible Lon Chaney Cabin.
  - ORV Finding: History is an outstandingly remarkable value. The one known site is NRHP eligible, is associated with the nationally acclaimed architect Paul Revere Williams, and is intimately connected to the stream. The cabin was built on the stream edge for silent film actor Lon Chaney, an avid fisherman.
- **Fisheries (Population and Habitat):**
  - This creek does not contain populations of wild stocks and/or federally listed species nor does the stream provide exceptionally high quality habitat for fish species.

- ORV Finding: Fish population and fish habitat are not outstandingly remarkable values.

Summary of Eligibility Findings: North Fork Big Pine Creek from the Headwaters to the Wilderness boundary is determined to be eligible. It is free flowing. Scenery, Recreation, Geology, and History are outstandingly remarkable values.

Classification Findings:

Located within John Muir Wilderness, Big Pine Creek, segment 1 has been given a classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive. Little or no evidence of human activity.
- Accessibility: Generally inaccessible, except by trail.
- Water Quality: Unknown

North Fork Big Pine Creek/Big Pine Creek, Segment 2 (River/Segment GIS Numbers: 1.02.1, 1.22.3, 1.22.4)

Location:

- County: Inyo County
- Beginning Point Description: Wilderness boundary
- End Point Description: Private Property
- (Includes portions of the North Fork Big Pine Creek)

Mileage:

- Studied: 3.6 miles
- Eligible: 3.6 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: Determination of Free Flow: The study reach is found to be free-flowing.

- **Scenery**
  - Description: Largely forested area, with occasional openings and views of spectacular geologic formations, traversed by Big Pine Creek trail. Along the roaded portion of the creek, recreation cabins, five campgrounds, pack station, resort and picnic area are visible from the creek.
  - ORV Finding: Scenery is not an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunities, such as hiking, fishing for nonnative trout species, and camping occur along the creek; these recreation opportunities are not unique or rare within the region of comparison, but do attract visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.

- **Geology**
  - Description: Unique geology, Palisades Glacier in the headwaters is visible from openings in the trail and along the road.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **Fisheries**
  - Description: This creek does not contain populations of wild stocks and/or federally listed species nor does the stream provide exceptionally high quality habitat for fish species.
  - ORV Finding: Neither fish (population) nor fish (habitat) are an outstandingly remarkable value.
- **Prehistory**
  - Description: Several prehistoric lithic scatters occur in this area.
  - ORV Finding: Prehistory is not an outstandingly remarkable value because this site is not unusual and not associated with any well-established themes of unique significance for the Inyo.
- **History**
  - Description: Big Pine Recreation Resident Tract.
  - ORV Finding: History is not an outstandingly remarkable value. The one known site is not usual, is not NRHP eligible, and is not associated with any well-established themes of unique significance for the Inyo.

Summary of Eligibility Findings: Big Pine Creek, segment 2, from the wilderness boundary to private property is determined to be eligible. It is free flowing. Recreation and geology are outstandingly remarkable values.

Classification Findings:

This segment has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Minimum impoundment associated with a small hydro-electric project at the Glacier lodge.
- Shoreline Development: Evidence of human activity: cabins, campgrounds, recreation residences, resort, paved road.
- Accessibility: Readily accessible by road.
- Water Quality: Unknown

Parker Creek (Segment 1) (River/Segment GIS Number: 1.25.1)

Location:

- County: Mono County
- Beginning Point Description: Headwaters
- End Point Description: Wilderness boundary

Mileage:

- Studied: 4.4 miles
- Eligible: 4.4 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified an ORV for scenery.

- **Scenery**
  - Description: High country vistas and scenery, interesting geologic features of folds, waterfalls and cascades over the headwall.
  - ORV Finding: Scenery is an outstandingly remarkable value
- **Recreation**
  - Description: Recreation opportunity is primarily hiking, camping and fishing. Popular hiking trail. These recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Geology is highly scenic due to the majesty of the canyon. While adding to the scenic quality of the canyon, this is not unique within the region of comparison. No unique geologic processes evident along and within the creek corridor
  - ORV Finding: Geology is not an outstandingly remarkable value.
- **Fisheries (Population and Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery.
  - ORV Finding: Fish (population and habitat) is not an outstandingly remarkable value.
- **Other (Botanical)**:
  - Description: Aspen is present within the river corridor.
  - ORV Finding: Other (Botanical) is not an outstandingly remarkable value because this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Summary of Eligibility Findings: Parker Creek from Headwaters to wilderness boundary is eligible. It is free flowing. Scenery and recreation are outstandingly remarkable values.

Classification Findings:

Parker Creek (segment 1) is within the Ansel Adams wilderness and has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive.

- Accessibility: accessible by trail.
- Water Quality: Unknown

Rock Creek Segment 1 (River/Segment GIS Number: 1.27.1, 1.27.2)

Location:

- County: Mono County
- Beginning Point Description: Outlet of Box Lake
- End Point Description: Wilderness Boundary

Mileage:

- Studied: 1.2 miles
- Eligible: 1.2 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery and geology.

- **Scenery**
  - Description: High country vistas and scenery, highly scenic due to the majesty of the canyon and the visible evidence of glaciation. Dramatic geologic evidence throughout the canyon adds to the outstanding scenic quality of the river corridor
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunity is primarily hiking, camping and fishing. Popular hiking trail. These recreation opportunities are not unique or rare within the region of comparison, but are attracting large numbers of visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Outstanding and unique glacial features in granitic batholith.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **History**
  - Description: A Traditional Cultural Property (TCP), Mono Pass Trail, has been documented. The documented TCP begins at trailhead, climbs to Mono Pass then continues through the Sierra National Forest.
  - ORV Finding: History is not an outstandingly remarkable value. The primary historic/modern cultural value of the TCP is linked to the trail rather than the river.

- **Prehistory**
  - Description: A Traditional Cultural Property (TCP), Mono Pass Trail, has been documented. The trans-Sierra trail up Rock Creek and over Mono Pass was a significant prehistoric travel and trade route.
  - ORV Finding: Prehistory is an outstandingly remarkable value. Rock Creek drainage to Mono Pass is a uniquely significant and long established prehistoric trade-travel route on the Forest, with continuing use in historic/modern times as associated with the NRHP eligible Mono Pass Trail.
- **Fisheries (Population and Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery.
  - ORV Finding: Fish (population and habitat) is not an outstandingly remarkable value.

Summary of Eligibility Findings: Rock Creek (segment 1) from outlet of Box Lake to wilderness boundary is eligible. It is free flowing. Scenery, recreation, geology, and prehistory are outstandingly remarkable values.

Classification Findings:

Located in the John Muir Wilderness, Rock Creek (segment 1) has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive.
- Accessibility: accessible by trail.
- Water Quality: Unknown

Rock Creek Segment 2 (River/Segment GIS Number: 1.27.3)

Location:

- County: Mono County
- Beginning Point Description: Wilderness boundary
- End Point Description: Highway 395 Bridge near Tom's Place

Mileage:

- Studied: 12.0 miles
- Eligible: 12.0 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery, recreation, and fisheries.

- **Scenery**
  - Description: High country vistas and scenery, highly scenic due to the majesty of the canyon and the visible evidence of glaciation. Dramatic geologic evidence throughout the canyon adds to the outstanding scenic quality of the river corridor.
  - ORV Finding: Scenery is an outstandingly remarkable value.

- **Recreation**
  - Description: Recreation opportunity is primarily hiking, camping and fishing, boating on the lakes, horseback riding. Popular recreation canyon. These recreation opportunities are not unique or rare within the region of comparison, but are attracting large numbers of visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Geology is highly scenic. Outstanding and unique glacial features in granitic batholith.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **History**
  - Description: A Traditional Cultural Property (TCP), Mono Pass Trail, has been documented as well as three recreation residence tracts, a resort, historic camps, a guard station, trash, foundations and rock alignments.
  - ORV Finding: ORV Finding: History is not an outstandingly remarkable value. The primary historic/modern cultural value of the TCP is linked to the trail rather than the river.
- **Prehistory**
  - Description: A Traditional Cultural Property (TCP), Mono Pass Trail, has been documented. The trans-Sierra trail up Rock Creek and over Mono Pass was a significant prehistoric travel and trade route. Numerous prehistoric sites known.
  - ORV Finding: Prehistory is an outstandingly remarkable value. Rock Creek drainage to Mono Pass is a uniquely significant and long established prehistoric trade-travel route on the Forest, with continuing use in historic/modern times as associated with the NRHP eligible Mono Pass Trail.
- **Fisheries (Population and Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery.
  - ORV Finding: Fish (population and habitat) is not an outstandingly remarkable value.
- **Other (Botanical):**
  - Description: Aspen, moist meadows, and a rare species, *Cares scirpoidea* ssp. p*seudoscirpoidea*¸ occur within the river corridor.
  - ORV Finding: Other (Botanical) is not an outstandingly remarkable value because this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Summary of Eligibility Findings: Rock Creek (segment 2) from wilderness boundary to Highway 395 Bridge near Tom's Place is eligible. It is free flowing. Scenery, recreation, geology, and prehistory are outstandingly remarkable values.

Classification Findings:

Rock Creek (segment 2) has been has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Several campgrounds, paved roads and parking lots, two resorts and one pack station, 3 recreation residence tracts within the creek corridor.
- Accessibility: accessible paved road.
- Water Quality: Unknown

Rock Creek - Lower Segment 3 (River/Segment GIS Number: 1.14.1, 1.14.2)

Location:

- County: Mono County
- Beginning Point Description: Highway 395 Bridge near Tom's Place
- End Point Description: national forest boundary

Mileage:

- Studied: 6.9 miles
- Eligible: 6.9 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery, recreation, and fisheries.

- **Scenery**
  - Description: A series of cascades. Dense and excellent quality riparian vegetation with old growth Jeffrey pine trees.
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunity is primarily hiking, driving for pleasure, fishing, bicycling. Popular recreation canyon. These recreation opportunities are not unique or rare within the region of comparison, but are attracting large numbers of visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Geology is highly scenic. While adding to the scenic quality of the canyon, this is not unique within the region of comparison. No unique geologic processes evident along and within the creek corridor
  - ORV Finding: Geology is not an outstandingly remarkable value.
- **Fisheries (Population and Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery
  - ORV Finding: Fish (population and habitat) is not an outstandingly remarkable value.

- **History**
  - Description: Historical features such as recreational residences, several foundations, and trash scatters occur in along segment 1.14.1.
  - ORV Finding: History is not an outstandingly remarkable value because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.
- **Prehistory**
  - Description: Numerous prehistoric sites known and are likely linked to the importance of the trans-Sierra trail up Rock Creek and over Mono Pass, a significant prehistoric travel and trade route.
  - ORV Finding: Prehistory is an outstandingly remarkable value. Concentration of prehistoric sites likely connected to a significant and long established prehistoric trade-travel route on the Forest up Rock Creek drainage.

Summary of Eligibility Findings: Lower Rock Creek (Segment 3) from Highway 395 Bridge near Tom's Place to the national forest boundary is eligible. It is free flowing. Scenery, Recreation, and Prehistory are outstandingly remarkable values.

Classification Findings:

Lower Rock Creek (segment 3) has been has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Paved roads and parking lots, nearby highway 395 visible in some spots.
- Accessibility: accessible paved road.
- Water Quality: Unknown

Rush Creek, Segment 3 (River/Segment GIS Number: 1.28.2)

Location:

- County: Mono County
- Beginning Point Description: Forest Boundary
- End Point Description: Inlet to Mono Lake

Mileage:

- Studied: 4.3 miles
- Eligible: 4.3 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values:

- **Geology**
  - Description: Through Mono Basin, unique geology and ice age lake bed features. It is the best delta feature in Mono Basin.

- ♦ ORV Finding: Geology is an outstandingly remarkable value.

- **History**
  - ♦ Description: Two historic settlements (multicomponent sites).
  - ♦ ORV Finding: History is not an outstandingly remarkable value. The few sites known are not usual or associated with any well-established themes of unique significance for the Inyo.
- **Prehistory**
  - ♦ Description: Several prehistoric sites known.
  - ♦ ORV Finding: Prehistory is not an outstandingly remarkable value. The few sites known are not usual or associated with any well-established themes of unique significance for the Inyo.
- **Other (Cultural)**
  - ♦ Description: Contemporary unique tribal significance and value associated with river/delta is known.
  - ♦ ORV Finding: Other (cultural) is an outstandingly remarkable value.

Summary of Eligibility Findings: The portion of Rush Creek from the forest boundary to Mono Lake is determined to be eligible. It is free flowing. Geology and cultural are outstandingly remarkable values.

Classification Findings: Rush Creek has been given a preliminary classification of "Recreational" based on the following:

- Water Resources Development: Some existing impoundments or diversions.
- Shoreline Development: Some development.
- Accessibility: Accessible by road.
- Water Quality: Unknown

South Fork Bishop Creek, Segment 1 (River/Segment GIS Number: 1.30.1)

Location:

- County: Inyo County
- Beginning Point Description: Headwaters
- End Point Description: Inlet at South Lake

Mileage:

- Studied: 3.6 miles
- Eligible: 3.6 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery and "other".

- **Scenery**
  - Description: High country vistas and scenery, many lakes and tributary streams, highly scenic due to the majesty of the canyon and the visible evidence of glaciation. Dramatic geologic evidence throughout the canyon adds to the outstanding scenic quality of the river corridor
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Recreation opportunity is primarily hiking, camping and fishing. Popular hiking trail. These recreation opportunities are not unique or rare within the region of comparison, but are attracting large numbers of visitors from outside of the region of comparison. Heavily-visited recreation canyon.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Geology is highly scenic and has interesting geology features. It is only site of cobalt deposits in the United States.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **Fisheries (Population and/or Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery
  - ORV Finding: Fish (population and/or habitat) is not an outstandingly remarkable value.
- **Other - Minerals**
  - Description: A rare mineral, cobalt, was described to occur within this area of the Bishop Creek drainage.
  - ORV Finding: Other – Although the rare mineral cobalt is found within this watershed, it does not occur within the river corridor and its presence is not due to the river. Other - Minerals is not an outstandingly remarkable value.

Summary of Eligibility Findings: South Fork Bishop Creek from the Headwaters to the inlet at South Lake is eligible. It is free flowing. Scenery, recreation, and geology are outstandingly remarkable values.

Classification Findings: Located in the John Muir Wilderness, South Fork Bishop Creek (segment 1) has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive.
- Accessibility: accessible by trail.
- Water Quality: Unknown

South Fork Bishop Creek, Segment 2 (River/Segment GIS Number: 1.30.2)

Location:

- County: Inyo County

- Beginning Point Description: Dam outlet at South Lake
- End Point Description: Habeggers RV Park

Mileage:

- Studied: 5.2 miles
- Eligible: 5.2 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for recreation.

- **Scenery**
  - Description: High country vistas and scenery, highly scenic Aspen stands and riparian vegetation stand in contrast to the steep, open canyon walls. Dramatic geologic evidence throughout the canyon adds to the outstanding scenic quality of the river corridor
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunity is primarily hiking, camping and fishing, boating on South Lake, horseback riding. Popular recreation canyon. These recreation opportunities are not unique or rare within the region of comparison, but are attracting large numbers of visitors from outside of the region of comparison.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Geology is highly scenic. While adding to the scenic quality of the canyon, this is not unique within the region of comparison. No unique geologic processes evident along and within the creek corridor
  - ORV Finding: Geology is not an outstandingly remarkable value.
- **History**
  - Description: Recreation residences (one eligible tract), outfitter camp, NR eligible Bishop Creek Hydroelectric District, historic camps and cabins.
  - ORV Finding: History is an outstandingly remarkable value. There are NRHP eligible sites associated with the stream and to themes of early hydroelectric development of regional importance and of unique significance for the Inyo.
- **Fisheries (Population and Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery
  - ORV Finding: Fish (population and/or habitat) is not an outstandingly remarkable value.

- **Other (Botanical):**
    - Description: Aspen and a rare species, *Tricholporum pumilium,* occur within the river corridor.
    - ORV Finding: Other (Botanical) is not an outstandingly remarkable value because this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Summary of Eligibility Findings: South Fork Bishop Creek (segment 2) from the outlet at South Lake to Habeggers RV Park is eligible. It is free flowing. Scenery, recreation and history are outstandingly remarkable values.

Classification Findings:

South Fork Bishop Creek (segment 2) has been given a preliminary classification of "recreational" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Several campgrounds, picnic areas trailheads and other paved parking areas, two resorts and one pack station within the creek corridor.
- Accessibility: accessible paved road.
- Water Quality: Unknown

South Fork Mill Creek, Segment 1(River/Segment GIS Number: 1.32.1)

Location:

- County: Mono County
- Beginning Point Description: Dore Pass Lake
- End Point Description: Crystal Lake

Mileage:

- Studied: 1.1 miles
- Eligible: 1.1 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 3/21/91 memo notes historic resources (historic mining activity) and rainbow and brook trout. The 1990s study identified ORVs for scenery, geology, and history.

- **Scenery**
    - Description: Highly scenic due to the majesty of the canyon and the visible evidence of glaciation. Dramatic geologic evidence throughout the canyon adds to the outstanding scenic quality of the river corridor
    - ORV Finding: Scenery is an outstandingly remarkable value.

- **Recreation**
  - Description: Recreation opportunity is primarily hiking, camping and fishing for nonnative brook and rainbow trout. Popular hiking trail. These recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison. Unique opportunities around visitation of historic mining sites.
  - ORV Finding: Recreation is an outstandingly remarkable value
- **Geology**
  - Description: Extent of Historic mining activity and scenic beauty of rocks in the canyon.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **History**
  - Description: Documented early mining sites.
  - ORV Finding: History is not an outstandingly remarkable value. Mining sites are connected more to mineral discovery locations than to streams.
- **Fisheries (Population and/or Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery
  - ORV Finding: Fish (population and/or habitat) is not an outstandingly remarkable value.

Summary of Eligibility Findings: South Fork Mill Creek (Segment 1) from Dore Pass Lake to Crystal Lake is eligible. It is free flowing. Scenery, recreation, and geology are outstandingly remarkable values.

Classification Findings:

It is within the Hoover Wilderness, and has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive.
- Accessibility: Accessible by trail.
- Water Quality: Unknown.

South Fork Mill Creek, Segment 2 (River/Segment GIS Number: 1.32.2)

Location:

- County: Mono County
- Beginning Point Description: Crystal Lake
- End Point Description: Hoover Wilderness boundary

Mileage:

- Studied: 1.6 miles
- Eligible: 1.6 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery, geology, and history.

- **Scenery**
  - Description: Highly scenic forested area including a section that traverses a very steep gorge within one mile of Mill Creek.
  - ORV Finding: Scenery is an outstandingly remarkable value
- **Recreation**
  - Description: Recreation opportunity is primarily hiking and camping and picnicking along the creek. Popular hiking trail. These recreation opportunities are not unique or rare within the region of comparison, but are attracting visitors from outside of the region of comparison. Unique opportunities around visitation of historic mining sites, Lundy and Tioga world's highest telephone line, historic trail associated with Tioga Mining District, and the historic mining road provide an outstandingly remarkable recreation experience.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Extent of Historic mining activity and scenic beauty of rocks in the canyon.
  - ORV Finding: Geology is an outstandingly remarkable value.
- **History**
  - Description: Documented early mining sites.
  - ORV Finding: History is not an outstandingly remarkable value. Mining sites are more connected to mineral discovery locations than to streams.
- **Fisheries (Population and/or Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery
  - ORV Finding: Fish (population and/or habitat) is not an outstandingly remarkable value.

Summary of Eligibility Findings: South Fork Mill Creek (segment 2) from Crystal Lake to the Hoover Wilderness boundary is eligible. It is free flowing. Scenery, recreation, and geology are outstandingly remarkable values.

Classification Findings:

South Fork Mill Creek (segment 2) has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive.
- Accessibility: Accessible by trail.
- Water Quality: Unknown

South Fork Mill Creek, Segment 3 (River/Segment GIS Number: 1.32.3)

Location:

- County: Mono County
- Beginning Point Description: Hoover Wilderness boundary
- End Point Description: Confluence with Main Fork of Mill Creek

Mileage:

- Studied: 0.3 miles
- Eligible: 0.3 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 3/21/91 memo notes historic resources (historic mining activity). The 1990s study identified ORVs for scenery, geology, and history. The present evaluation notes no historic sites documented in this segment.

- **Scenery**
  - Description: Highly scenic due to the majesty of the canyon and the visible evidence of glaciation. Dramatic geologic evidence throughout the canyon adds to the outstanding scenic quality of the river corridor
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunity is primarily hiking, camping and fishing for nonnative brook and rainbow trout. Popular hiking trail.
  - ORV Finding: Recreation is an outstandingly remarkable value
- **Geology**
  - Description: While adding to the scenic quality of the canyon, this is not unique within the region of comparison. No unique geologic processes evident along and within the creek corridor
  - ORV Finding: Geology is not an outstandingly remarkable value.
- **Prehistory**
  - Description: One prehistoric site.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The one known site is not usual or associated with any well-established themes of unique significance for the Inyo.

Summary of Eligibility Findings: South Fork Mill Creek (Segment 3) from Hoover Wilderness boundary to the confluence with the Main Fork of Mill Creek is eligible. It is free flowing. Scenery and recreation are the outstandingly remarkable values.

Classification Findings:

South Fork Mill Creek (segment 3) has been given a preliminary classification of "scenic" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive.
- Accessibility: accessible by trail.
- Water Quality: Unknown.

Walker Creek, Segment 1 – Bloody Canyon (River/Segment GIS Number: 1.33.1)

Location:

- County: Mono County
- Beginning Point Description: Headwater tributaries
- End Point Description: Ansel Adams Wilderness boundary

Mileage:

- Studied: 2.6 miles
- Eligible: 2.6 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery, recreation, geology, and history. The present evaluation notes no historic sites are documented along this reach.

- **Scenery**
  - Description: Diverse watercourse beginning at the headwaters where the water is characterized by small snow tarns and pocket meadows, transitioning through steep sections with waterfalls and fissures, and cascades. Vegetation is scenic and varied, glacial polish and grooves on bedrock add to the scenic quality
  - ORV Finding: Scenery is an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunity is primarily hiking, camping and fishing. These recreation opportunities are not unique or rare within the region of comparison, but are attracting large numbers of visitors from outside of the region of comparison. Unique recreation opportunities are associated with visiting remnants of historic cabins and historic mining route, and potential to view Bighorn sheep from the river corridor.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Geology is highly scenic. While adding to the scenic quality of the canyon, this is not unique within the region of comparison. No unique geologic processes evident along and within the creek corridor.
  - ORV Finding: Geology is not an outstandingly remarkable value.

- **Prehistory**
  - Description: Five scattered prehistoric sites.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. Known sites are not usual or associated with any well-established themes of unique significance for the Inyo.
- **Fisheries (Population and/or Habitat)**
  - Description: Rainbow and brook trout are planted here. There is no native fishery
  - ORV Finding: Fish (population and/or habitat) is not an outstandingly remarkable value.
- **Other (Botanical):**
  - Description: Two rare plant species occur within this area, *Carex tiogana* and *Agrostis humilis*.
  - ORV Finding: Other (Botanical) is not an outstandingly remarkable value because this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Summary of Eligibility Findings: Walker Creek from the Headwater tributaries to Ansel Adams Wilderness boundary is eligible. It is free flowing. Scenery and recreation are outstandingly remarkable values.

Classification Findings:

Walker Creek (segment 1 - Bloody Canyon) located within the Ansel Adams Wilderness and has been given a preliminary classification of "wild" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Essentially primitive and undeveloped.
- Accessibility: Accessible by trail.
- Water Quality: Unknown.

Walker Creek, Segment 2 – Bloody Canyon (River/Segment GIS Number: 1.33.2)

Location:

- County: Mono County
- Beginning Point Description: Ansel Adams Wilderness boundary
- End Point Description: Walker Lake

Mileage:

- Studied: 0.4 miles
- Eligible: 0.4 miles

Eligibility Findings:

Determination of Free Flow: The study reach is found to be free-flowing.

Determination of Outstandingly Remarkable Values: The 1990s study identified ORVs for scenery, recreation, geology, and history. The present evaluation notes no historic sites are documented along this reach.

- **Scenery**
  - Description: At inlet to Walker Lake scenery includes views of lake and Bloody Canyon area, but it is not unique within the region of comparison.
  - ORV Finding: Scenery is not an outstandingly remarkable value.
- **Recreation**
  - Description: Recreation opportunity is primarily hiking, camping and fishing. These recreation opportunities are not unique or rare within the region of comparison, but are attracting large numbers of visitors from outside of the region of comparison. Unique recreation opportunities are associated with visiting remnants of historic cabins and historic mining route, and potential to view Bighorn sheep from the river corridor.
  - ORV Finding: Recreation is an outstandingly remarkable value.
- **Geology**
  - Description: Geology is highly scenic. While adding to the scenic quality of the canyon, this is not unique within the region of comparison. No unique geologic processes evident along and within the creek corrido
  - ORV Finding: Geology is not an outstandingly remarkable value.
- **Prehistory**
  - Description: Two prehistoric sites.
  - ORV Finding: Prehistory is not an outstandingly remarkable value. The few sites known are not usual or associated with any well-established themes of unique significance for the Inyo.
- **Fisheries (Population and/or Habitat):**
  - Description: Rainbow and brook trout are planted here. There is no native fishery
  - ORV Finding: Fish (population and/or habitat) is not an outstandingly remarkable value.

Summary of Eligibility Findings: Walker Creek (Segment 2 – Bloody Canyon) from the Ansel Adams Wilderness boundary to Walker Lake is eligible. It is free flowing. Recreation is an outstandingly remarkable value.

Classification Findings:

Walker Creek (Segment 2 - Bloody Canyon) has been given a preliminary classification of "scenic" based on the following:

- Water Resources Development: Free of impoundment.
- Shoreline Development: Hiking and user trails for access to waterways.
- Accessibility: Accessible by trails.
- Water Quality: Unknown.

Table C-5. Previously evaluated river segments with river related values but no associated outstandingly remarkable values (ORVs)

Stream Name	Stream ID	River-Related Value
Baker Creek	1.01.1	Prehistory – One prehistoric site is known along this segment. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.
Big Pine Creek	1.02.2	History – One recreation residence track is documented along this segment. History was not determined an ORV because the one site known is not unusual or associated with any well-established themes of unique significance for the Inyo.
George Creek	1.06	Fisheries – Desirable non-native trout occur within this creek, however this does not represent unique fishery populations within the region of comparison. Wildlife habitat – Riparian areas offer habitat to a variety of wildlife species, however this does not represent unique wildlife habitat within the region of comparison. Scenery – This area offers views of high alpine peaks and changes in landscape forms as you move from high elevation alpine habitat to lower elevation sagebrush communities. This scenery is not unique within the Region of Comparison, as the majority of streams within this area showcase contrasting high elevation and lower elevation habitats; therefore this is not an ORV. History – A historic cabin occurs in this area. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Other – Canyon live oak, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Horton Creek	1.08	Recreation – Hiking and fishing occur along these stream. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. History – A historic cabin occurs in this area. History was not determined an ORV because this site is not unusual or associated with well-established themes of unique significance for the Inyo. Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River-Related Value
Independence Creek	1.10	Fisheries– Desirable non-native trout occur within this creek, however this does not represent unique fishery populations within the region of comparison. Scenic - This area offers views of high alpine peaks and changes in landscape forms as you move from high elevation alpine habitat to lower elevation sagebrush communities. This scenery is not unique within the Region of Comparison, as the majority of streams within this area showcase contrasting high elevation and lower elevation habitats; therefore this is not an ORV. Recreation – Hiking, fishing and developed camping occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. History – Historic sites documented include a recreational residence tract, concrete foundation and a drift fence. History was not determined an ORV because these sites are not unusual or known to be associated with any well-established themes of unique significance for the Inyo. Prehistory – Several prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other - Black oak and *Carex petasata*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Lee Vining Creek	1.12.5	Recreation – Fishing occurs along this segment of Lee Vining Creek. This is not unique within the Region of Comparison because many areas offer fishing access or opportunities; therefore recreation is not considered an ORV.
Lee Vining Creek	1.12.6	Scenery – This segment offers views of Mono Lake, the town of Lee Vining, and the Sierra Nevada. This scenery is not unique within the Region of Comparison, as the majority of streams within this area showcase views of Mono Lake; therefore this is not an ORV. Recreation –The Lee Vining Creek Trail which connects the town of Lee Vining to the Mono Basin National Forest Scenic Area Visitor Center occurs along this segment. Although this trail is found along the creek and offers interpretive displays, this recreation use is not unique within the Region of Comparison and therefore is not considered an ORV. History – The historic Lee Vining Ranger Station is known. History was not determined an ORV because this site is not unusual and is not known to be associated with any well-established themes of unique significance for the Inyo. Prehistory – Numerous prehistoric sites occur in this area. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other - Represent remarkably diverse Riparian corridors and habitat/protection for plants. While a key habitat type on the landscape, the riparian veg characteristics are not an ORV within the ROC, because they do not represent an extensive and unique combination of botanical resources.

Stream Name	Stream ID	River-Related Value
Mill Creek	1.18.5	Scenery - Segment provides views of Mono Lake and high Sierra peaks. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery. Recreation –Fishing occurs along this stream. This use is not unique within the Region of Comparison because many areas offer fishing access or opportunities; therefore recreation is not considered an ORV. Prehistory – Two prehistoric resources are known. Prehistory was not determined an ORV because these resources are not unusual or associated with any well-established themes of unique significance for the Inyo.
Mill Creek	1.18.6	Scenery - Segment provides views of Mono Lake and high Sierra peaks. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery. Recreation – This area offers fishing, birding, hiking, and sight- seeing opportunities. These uses are not unique within the Region of Comparison because many areas offer these same opportunities; therefore recreation is not considered an ORV.
Mill Creek	1.18.7	Scenery - Segment provides views of Mono Lake and high Sierra peaks. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery. Recreation – This area offers fishing, birding, hiking, and sight- seeing opportunities. These uses are not unique within the Region of Comparison because many areas offer these same opportunities; therefore recreation is not considered an ORV. Prehistory – One prehistoric site is documented. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.
Mill Creek	1.18.8	Scenery - Segment provides views of Mono Lake and high Sierra peaks. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery. Recreation – This area offers fishing, birding, hiking, and sight- seeing opportunities. These uses are not unique within the Region of Comparison because many areas offer these same opportunities; therefore recreation is not considered an ORV. Prehistory - A prehistoric site is known. Prehistory was not determined an ORV because the site is not unusual or associated with well-established themes of unique significance for the Inyo.
Mill Creek	1.18.9	Scenery - Segment provides views of Mono Lake and high Sierra peaks. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery. Recreation – This area offers fishing, birding, hiking, and sight- seeing opportunities. These uses are not unique within the Region of Comparison because many areas offer these same opportunities; therefore recreation is not considered an ORV. Prehistory – One prehistoric site is documented. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.

Stream Name	Stream ID	River-Related Value
Mill Creek	1.18.10	Scenery - Segment provides views of Mono Lake and high Sierra peaks. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery. Recreation – This area offers fishing, birding, hiking, and sight- seeing opportunities. These uses are not unique within the Region of Comparison because many areas offer these same opportunities; therefore recreation is not considered an ORV. Prehistory – One prehistoric site is documented. Prehistory was not determined an ORV because this site is not unusual or associated with well-established themes of significance for the Inyo.
Mill Creek	1.18.11	Scenery – Segment provides views of Mono Lake and high Sierra peaks. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery. Recreation – This area offers fishing, birding, hiking, and sight- seeing opportunities. These uses are not unique within the Region of Comparison because many areas offer these same opportunities; therefore recreation is not considered an ORV. Prehistory – One prehistoric site is documented. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.
Mill Creek	1.18.12	Scenery - Segment provides views of Mono Lake and high Sierra peaks. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery. Recreation – This area offers fishing, birding, hiking, and sight- seeing opportunities. These uses are not unique within the Region of Comparison because many areas offer these same opportunities; therefore recreation is not considered an ORV. Geology – This area includes unique geologic features; however it is not unique within the Region of Comparison and therefore is not an ORV. Other – Alkali flat, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Mine Creek	1.19	History - Historic features from mining activities occur within this area. History was not determined an ORV because these sites are associated with mineral discovery locations rather than the river and are not unusual or unique for the Forest. Prehistory – A prehistoric site is known. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo.
Mulkey Creek	1.20	History – One historic camp is documented. History was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Prehistory – Six prehistoric sites are known. Prehistory was not determined an ORV because the sites are not unusual, unusually dense or associated with any well-established themes of unique significance for the Inyo. Other – Meadow and *Ivesia campestris*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River-Related Value
Ninemile Creek	1.21	Recreation – Hiking occurs along this stream. This use is not unique within the Region of Comparison because many areas offer hiking opportunities; therefore recreation is not considered an ORV. Geology - Hot spring features occur in this area, however these are not unique within the Region of Comparison and therefore not an ORV. History – The Jordon Hot Springs Resort is documented. The resort is abandoned and largely burnt down. History was not determined an ORV because this site is not NRHP ineligible. Other – Meadow and canyon live oak, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Owens River	1.24.1	Prehistory – Several prehistoric sites are documented in this area. Prehistory was not determined an ORV because only a few sites are known and they are not usual or associated with any well-established themes of unique significance for the Inyo. Other – Moist meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Owens River	1.24.2	Prehistory – Two prehistoric sites are known. Prehistory was not determined an ORV because only a few sites are known and they are not usual or associated with any well-established themes of unique significance for the Inyo. Other – Moist meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
Parker Creek	1.25.2	Scenery – River offers views of high mountain peaks and Mono Lake. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery.
Redrock Creek	1.26	Recreation – Hiking and fishing occur along this stream. These uses are not unique within the Region of Comparison because many areas offer hiking and fishing access or opportunities; therefore recreation is not considered an ORV. History – A few historic features such as a cabin and corral are known. History was not determined an ORV because these sites are not unusual or known to be associated with any well-established themes of unique significance for the Inyo. Prehistory – Two prehistoric sites are known. Prehistory was not determined an ORV because only a few sites are known and they are not usual or associated with any well-established themes of unique significance for the Inyo. Other- *Bruchia bolanderi,* however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Stream Name	Stream ID	River-Related Value
Rush Creek	1.28.1	Scenic – This area provides views of high alpine peaks and canyons, as well as fall color opportunities. Scenery was not determined to be an Outstanding Remarkable Value because the scenery is not unique within the Region of Comparison, as other streams offer this same scenery. Recreation – This area offers opportunities for fishing. This use is not unique within the Region of Comparison because many areas offer fishing access or opportunities; therefore recreation is not considered an ORV. History – Historic features, such as recreational residences, a resort and two trash scatters are known. History was not determined an ORV because these sites are NRHP ineligible and/or not unusual or associated with any well-established themes of unique significance for the Inyo. Other - Aspen, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
South Fork Big Pine Creek	1.29	Recreation – Hiking and fishing occur along this creek. These activities are not unique within the Region of Comparison because many areas offer hiking and motorized access or opportunities; therefore recreation is not considered an ORV. History – Two sites, a recreational residence tract and resort, are known. History was not determined an ORV because these sites are NRHP ineligible.
South Fork Cottonwood Creek	1.31	History – An historic cabin and camps are known. History was not determined an ORV because these sites are not unusual or known to be associated with any well-established themes of unique significance for the Inyo. Other- Moist meadow, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.
West Fork Coyote Creek	1.34	History – An historic log structure and mine are known. History was not determined an ORV because the few sites are not unusual or known to be associated with any well-established themes of unique significance for the Inyo. Prehistory – One prehistoric site is documented. Prehistory was not determined an ORV because this site is not unusual or associated with any well-established themes of unique significance for the Inyo. Other – *Carex scirpoidea* ssp. *pseudoscirpoidea*, however this does not represent an extensive and unique combination of botanical resources, or an outstanding example of a botanical resource, within the region of comparison.

Summary of Eligibility and Classification Findings

A total of approximately 1,224.6 miles of river were included in the current inventory that was evaluated for wild and scenic river eligibility by the Inyo National Forest. Of that inventory, approximately 245.5 miles of river had been evaluated in previous efforts and approximately 128.3 miles had previously been determined to be eligible and have been managed to protect their eligibility. Of those eligible rivers, approximately 70.9 miles were assigned a preliminary classification of "wild," approximately 9.7 miles were assigned a preliminary classification of "scenic," and 47.7 miles were assigned a preliminary classification of "recreational."

The current effort included development of a comprehensive inventory of rivers on the national forest. Rivers that had been previously evaluated for eligibility in earlier efforts were given a refreshed look to determine if there were any changed conditions or new information and findings were adjusted accordingly. Of the 128.3 miles that had previously been determined to be eligible, 124.4 miles were reaffirmed as eligible. Classifications were reviewed and adjusted if changed conditions were present. The updated classification findings on the previously evaluated rivers includes approximately 74.9 miles were assigned a preliminary classification of "wild," approximately 5.8 miles were assigned a preliminary classification of "scenic," and 59.4 miles were assigned a preliminary classification of "recreational."

New inventory was evaluated to determine if free flow and any outstandingly remarkable values were present. Of the 979.1 miles of new inventory that were evaluated for eligibility, approximately 101.1 miles were determined to be eligible. The classification findings on the newly evaluated rivers includes approximately 56.6 miles were assigned a preliminary classification of "wild," approximately 8.7 miles were assigned a preliminary classification of "scenic," and 35.8 miles were assigned a preliminary classification of "recreational." The total miles of river currently determined to be eligible for inclusion in the National Wild and Scenic Rivers System is approximately 241.2 miles. A detailed summary of the eligibility and classification findings for the Inyo National Forest can be found on the following tables and maps.

Eligibility Tables and Maps

The following tables provide summaries of the rivers that meet eligibility requirements to be considered for inclusion in the National Wild and Scenic Rivers System. Maps follow each table. Larger, higher resolution maps are available to view online at the Pacific Southwest Region (Region 5) Web page at: http://www.fs.usda.gov/detail/r5/landmanagement/planning/?cid=STELPRD3833668.

Table C-6. Inyo National Forest rivers that meet eligibility requirements to be considered for inclusion in the National Wild and Scenic Rivers System

River Name	Stream ID(s)	Miles	Preliminary Classification (Wild Scenic or Recreational)	Beginning Point	End Point	Outstandingly Remarkable Values
Convict Creek (Segment 1)	1.03	7.0	Wild	Headwaters	Convict Lake	Scenery, Recreation, Geology, Other (Botanical)
Cottonwood Creek (Segment 1) White Mountains	1.028	1.7	Wild	Headwaters at White Mountains Wilderness Boundary	Wild and Scenic designated segment	Fish Populations, Prehistory
Cottonwood Creek (Segment 1)	1.04.1 1.04.2	4.7	Wild	Headwaters	Southeast side of Forest Road 16S02	Scenery, Recreation, Geology, Fish Habitat, Fish Populations, History
Cottonwood Creek (Segment 2)	1.04.3	1.4	Recreational	Southeast side of Forest Road 16S02	Los Angeles Department of Water and Power land east of the Old Cottonwood Mill site	Recreation, Fish Populations, History
Cottonwood Creek (Segment 3)	1.04.4	3.8	Wild	Los Angeles Department of Water and Power land east of the Old Cottonwood Mill site	Golden Trout Wilderness boundary	Scenery, Fish Populations, History
Cottonwood Creek (Segment 4)	1.04.5	2.1	Recreational	Golden Trout Wilderness boundary	Intake in Section 27 just east of Forest Service Road 17S01	Scenery, Fish Populations, History, Prehistory
Cottonwood Creek (Segment 5) While Mountains	1.027.2	0.7	Recreational	Forest Boundary	Forest Boundary	History
Crest Creek	1.031	4.0	Wild	Headwaters	Inlet to Gem Lake	History
Division Creek	1.041.2	3.4	Recreational	Wilderness Boundary	Forest Boundary	History
Fish Creek	1.053	20.4	Wild	Headwaters	Confluence with Middle Fork San Joaquin River	Scenery, Recreation, Geology, Wildlife Populations
Golden Trout Creek	1.07	19.0	Wild	Headwaters above Big Whitney Meadows	Confluence with the Kern River	Scenery, Recreation, Geology, Fish Populations, Fish Habitat, History

River Name	Stream ID(s)	Miles	Preliminary Classification (Wild Scenic or Recreational)	Beginning Point	End Point	Outstandingly Remarkable Values
Hot Creek (Segment 1)	1.067	5.6	Recreational	Headwaters	Intersection of stream and Forest Road 3S45G	History, Prehistory, Other
Hot Creek (Segment 2)	1.09.1	4.4	Recreational	Intersection of stream and Forest Road 3S45G	Fish Hatchery	Geology, Prehistory, Other (Botanical)
Hot Creek (Segment 3)	1.09.2	2.9	Recreational	Fish Hatchery	national forest boundary	Scenery, Recreation, Geology, Fish Populations, Fish Habitat, Prehistory, Other (Botanical)
Laurel Creek	1.11	3.8	Scenic	Wilderness boundary	Los Angeles Department of Water and Power land	Scenery, Recreation, Geology
Lee Vining Creek (Segment 1)	1.12.1	1.4	Wild	Headwaters tributaries	Harvey Monroe Hall Research Natural Area	Scenery, Recreation, Geology
Lee Vining Creek (Segment 2)	1.12.2	0.2	Wild	Harvey Monroe Hall Research Natural Area	Greenstone Lake	Scenery, Recreation, Geology
Lee Vining Creek (Segment 3)	1.12.3	3.0	Recreational	Saddlebag Lake	Hwy 120	Scenery, Recreation, Geology
Lee Vining Creek (Segment 4)	1.12.4	6.0	Recreational	Southern CA Edison Powerhouse	Los Angeles Department of Water and Power Diversion Pond	Scenery, Recreation, Geology
Lee Vining Creek (Segment 7)	1.079.2 1.079.3	2.3	Scenic	Highway 120	Southern California Edison (SCE) Powerhouse	Geology
Lee Vining Creek (Segment 8)	1.079.1	1.9	Scenic	Inlet to Greenstone Lake	Outlet of Saddlebag Lake	Scenery, Recreation, Geology
Little Hot Creek	1.084	3.9	Recreational	Antelope Spring	Forest Boundary	Geology, Prehistory, Other
Lone Pine Creek/North fork Lone Pine Creek (Segment 1)	1.13 1.23	4.7	Wild	North Fork and South fork Headwaters	John Muir Wilderness boundary	Scenery, Recreation, Geology
Lone Pine Creek (Segment 2)	1.087	3.9	Recreational	John Muir Wilderness boundary	Inyo national forest boundary near Lone Pine Campground	Scenery, Recreation, Geology
Mammoth Creek (Segment 2) 1.094.2	1.094.2	0.04	Recreational	Intersection with Sherwin Creek	0.04 miles after intersection with Sherwin Creek	History, Prehistory
Mammoth Creek (Segment 3) 1.094.3	1.094.3	0.02	Recreational	South of Hot Creek by 0.02 miles	Intersection with Hot Creek	History, Prehistory

River Name	Stream ID(s)	Miles	Preliminary Classification (Wild Scenic or Recreational)	Beginning Point	End Point	Outstandingly Remarkable Values
Mammoth Creek (Segment 4) 1.094.4	1.094.4	3.5	Recreational	Wilderness Boundary	Twin Lakes Outlet	History, Prehistory
Mammoth Creek (Segment 5) 1.15.1	1.15.1	4.5	Recreational	Twin Lakes	Sherwin Campground	History, Prehistory
Mammoth Creek (Segment 6) 1.15.2	1.15.2	2.4	Recreational	Sherwin Campground	South of Hot Creek by 0.02 miles	Prehistory
McGee Creek (Segment 1)	1.16	6.7	Wild	Headwaters	Wilderness boundary	Scenery, Recreation, Geology
McGee Creek (Segment 2)	1.099	3.8	Recreational	Wilderness Boundary	Forest Boundary	Geology
Middle Fork Bishop Creek	1.104.1	5.2	Wild	Headwaters	Outlet of Sabrina Lake	History
Middle Fork San Joaquin River	1.17	3.5	Wild	Headwaters are from an unnamed lake southwest of Thousand Island Lake	Middle Fork San Joaquin River at the northeast end of Thousand Island Lake	Scenery, Recreation, Geology
Mill Creek (Segment 1)	1.18.1 1.18.2	4.0	Wild	Headwaters	Wilderness boundary	Scenery, Recreation, Geology
Mill Creek (Segment 2)	1.18.3	1.4	Scenic	Wilderness boundary	Private Property	Scenery, Recreation, Geology
Mill Creek (Segment 3)	1.18.4	0.8	Recreational	Private Property	Lundy Lake	Scenery, Recreation, Geology
Mill Creek (Segment 5)	1.105.2	1.1	Wild	Headwaters	Intersection with Mill Creek 1.18.1	Geology
North Fork Big Pine Creek (Segment 1)	1.22.1 1.22.2	5.5	Wild	Northern headwaters on flank of Cloudripper	Wilderness boundary	Scenery, Recreation, Geology, History
North Fork Big Pine Creek/Big Pine Creek (Segment 2)	1.02.1 1.22.3 1.22.4	3.6	Recreational	Wilderness boundary	Private Property	Recreation, Geology
North Fork Crooked Creek	1.126	4.6	Scenic	Headwaters	Confluence with South Fork Crooked Creek	Prehistory

River Name	Stream ID(s)	Miles	Preliminary Classification (Wild Scenic or Recreational)	Beginning Point	End Point	Outstandingly Remarkable Values
O'Harrel Canyon Creek	1.141	5.3	Recreational	Headwaters	Forest Boundary	Fish Populations, Prehistory
Parker Creek	1.25.1	4.4	Wild	Headwaters	Wilderness Boundary	Scenery, Recreation
Poison Creek	1.153	3.4	Wild	Headwaters	Intersection with South Fork Cottonwood Creek	Prehistory
Rock Creek (Segment 1)	1.27.1 1.27.2	1.2	Wild	Outlet of Box Lake	Wilderness Boundary	Scenery, Recreation, Geology, Prehistory
Rock Creek (Segment 2)	1.27.3	12.0	Recreational	Wilderness boundary	Highway 395 bridge near Toms Place	Scenery, Recreation, Geology, Prehistory
Rock Creek (Segment 3)	1.161	3.1	Wild	Headwaters	Box Lake	Geology
Rock Creek –Lower (Segment 3)	1.14.1 1.14.2	6.9	Recreational	Highway 395 bridge near Toms Place	national forest boundary	Scenery, Recreation, Prehistory
Rush Creek (Segment 1)	1.165.1	3.7	Wild	Headwaters	Inlet of Waugh Lake	Scenery, Recreation, Wildlife Populations
Rush Creek (Segment 2)	1.165.2	4.2	Wild	Inlet of Waugh Lake	Ansel Adams Wilderness Boundary	Scenery, Recreation, History, Prehistory
Rush Creek (Segment 3)	1.28.2	4.3	Recreational	Forest Boundary	Inlet to Mono Lake	Geology, Other (Cultural)
Rush Creek (Segment 4)	1.165.4 1.165.6 1.165.7	1.9	Recreational (1.165.4, 1.165.6) Wild (1.165.7)	Ansel Adams Wilderness Boundary	Confluence with Reversed Creek	History
South Fork Bishop Creek (Segment 1)	1.30.1	3.6	Wild	Headwaters	Inlet at South Lake	Scenery, Recreation, Geology
South Fork Bishop Creek (Segment 2)	1.30.2	5.2	Recreational	Dam outlet at South Lake	Habeggers RV Park	Scenery, Recreation, History
South Fork Cottonwood Creek	1.180	3.7	Wild	Headwaters	Intersection with Cottonwood Creek	Prehistory
South Fork Mill Creek (Segment 1)	1.32.1	1.1	Wild	Dore Pass Lake	Crystal Lake	Scenery, Recreation, Geology
South Fork Mill Creek (Segment 2)	1.32.2	1.6	Wild	Crystal Lake	Hoover Wilderness boundary	Scenery, Recreation, Geology

River Name	Stream ID(s)	Miles	Preliminary Classification (Wild Scenic or Recreational)	Beginning Point	End Point	Outstandingly Remarkable Values
South Fork Mill Creek (Segment 3)	1.32.3	0.3	Scenic	Hoover Wilderness boundary	Confluence with Mill Creek	Scenery, Recreation
South Fork Oak Creek (Segment 1)	1.187.1	3.6	Wild	Headwaters	Wilderness boundary	Scenery, Geology, Other (Botanical)
South Fork Oak Creek (Segment 2)	1.187.2	3.9	Recreational	Wilderness boundary	Road 13S04	Scenery, Geology, Other (Botanical)
Volcanic Creek	1.203	2.3	Wild	Volcano Meadow	Intersection with Golden Trout Creek	Geology
Walker Creek (Segment 1)	1.33.1	2.6	Wild	Headwaters tributaries	Ansel Adams Wilderness boundary	Scenery, Recreation
Walker Creek (Segment 2)	1.33.2	0.4	Scenic	Ansel Adams Wilderness boundary	Walker Lake	Recreation

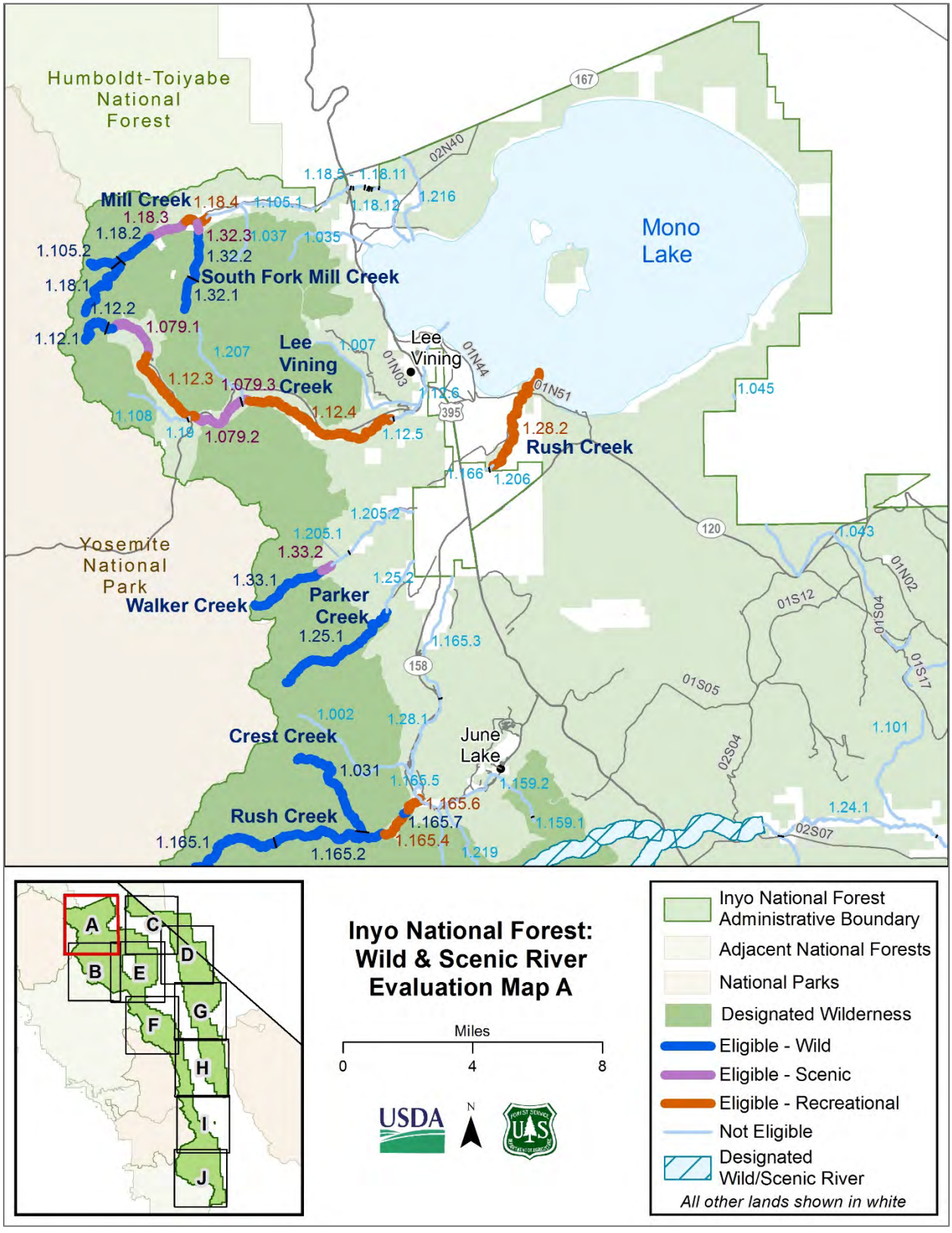

Figure C-2. Wild and scenic river evaluation map A

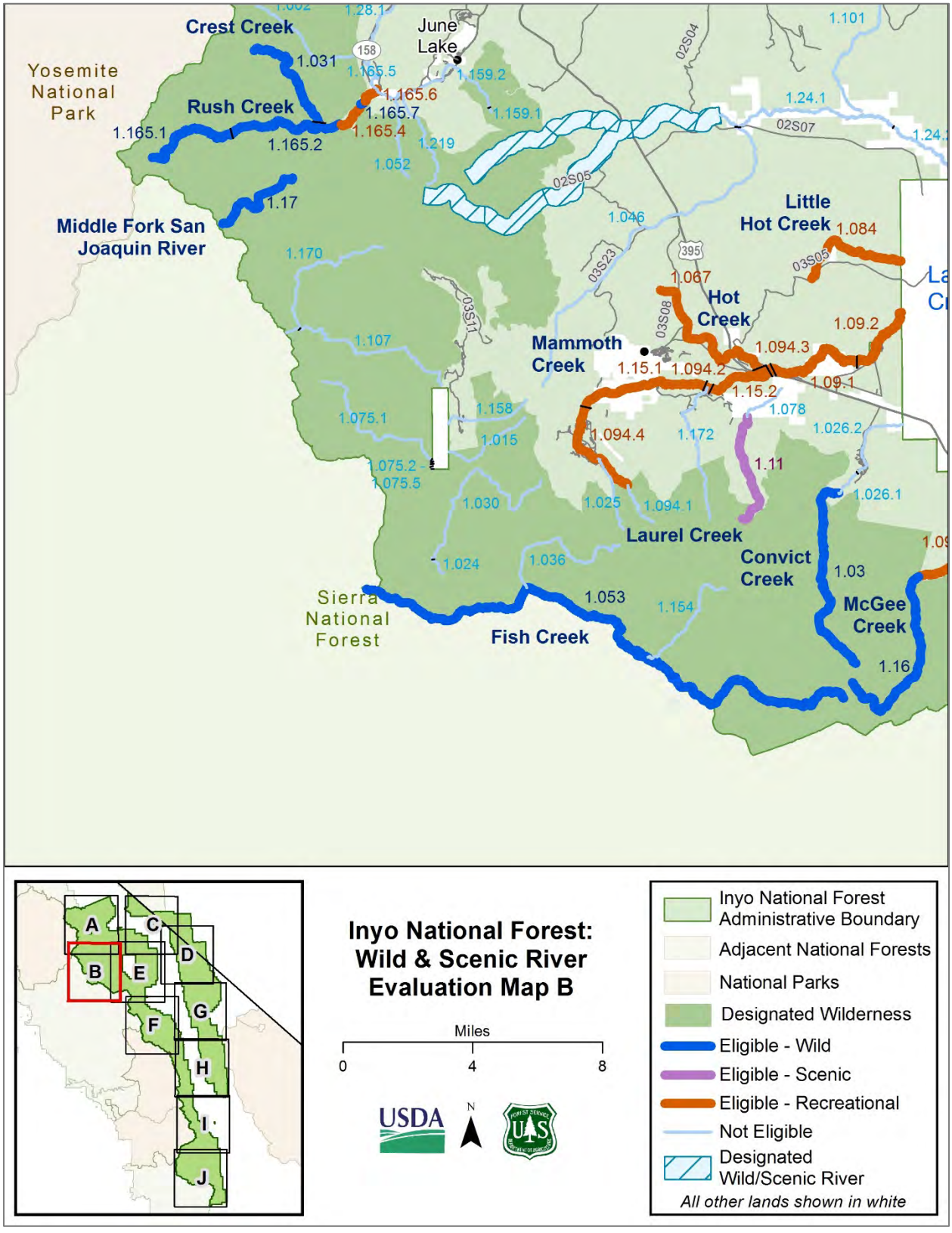

Figure C-3. Wild and scenic river evaluation map B

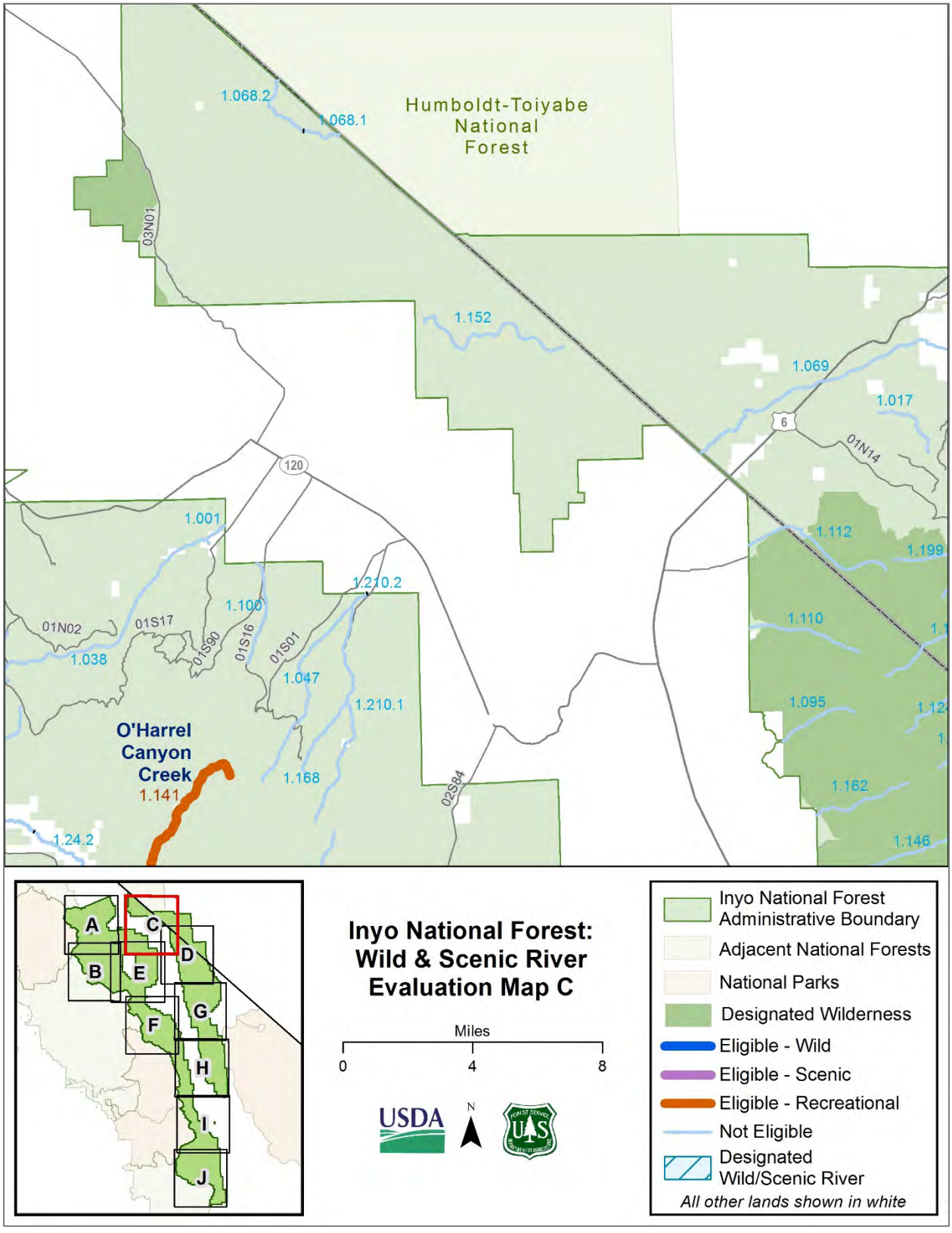

Figure C-4. Wild and scenic river evaluation map C

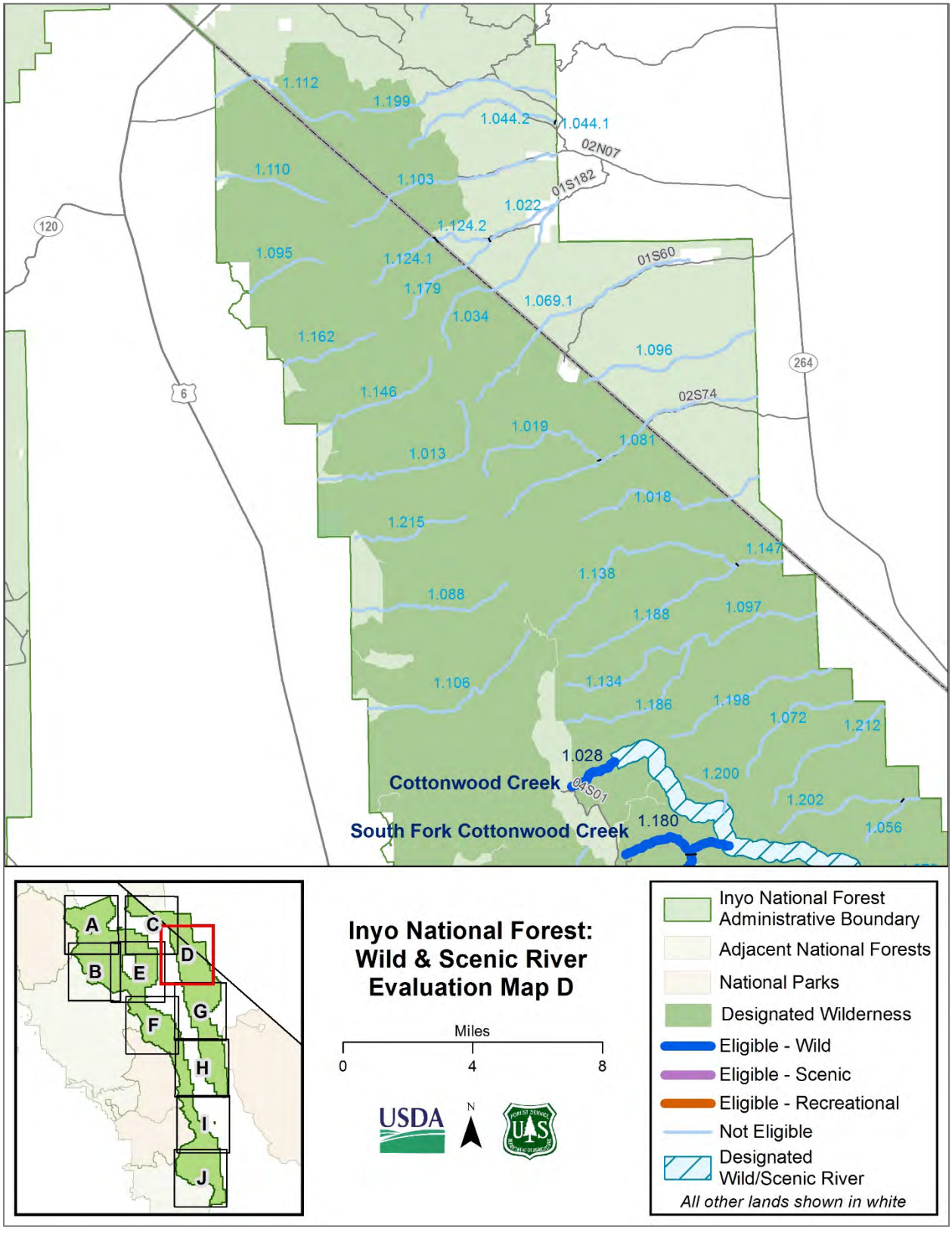

Figure C-5. Wild and scenic river evaluation map D

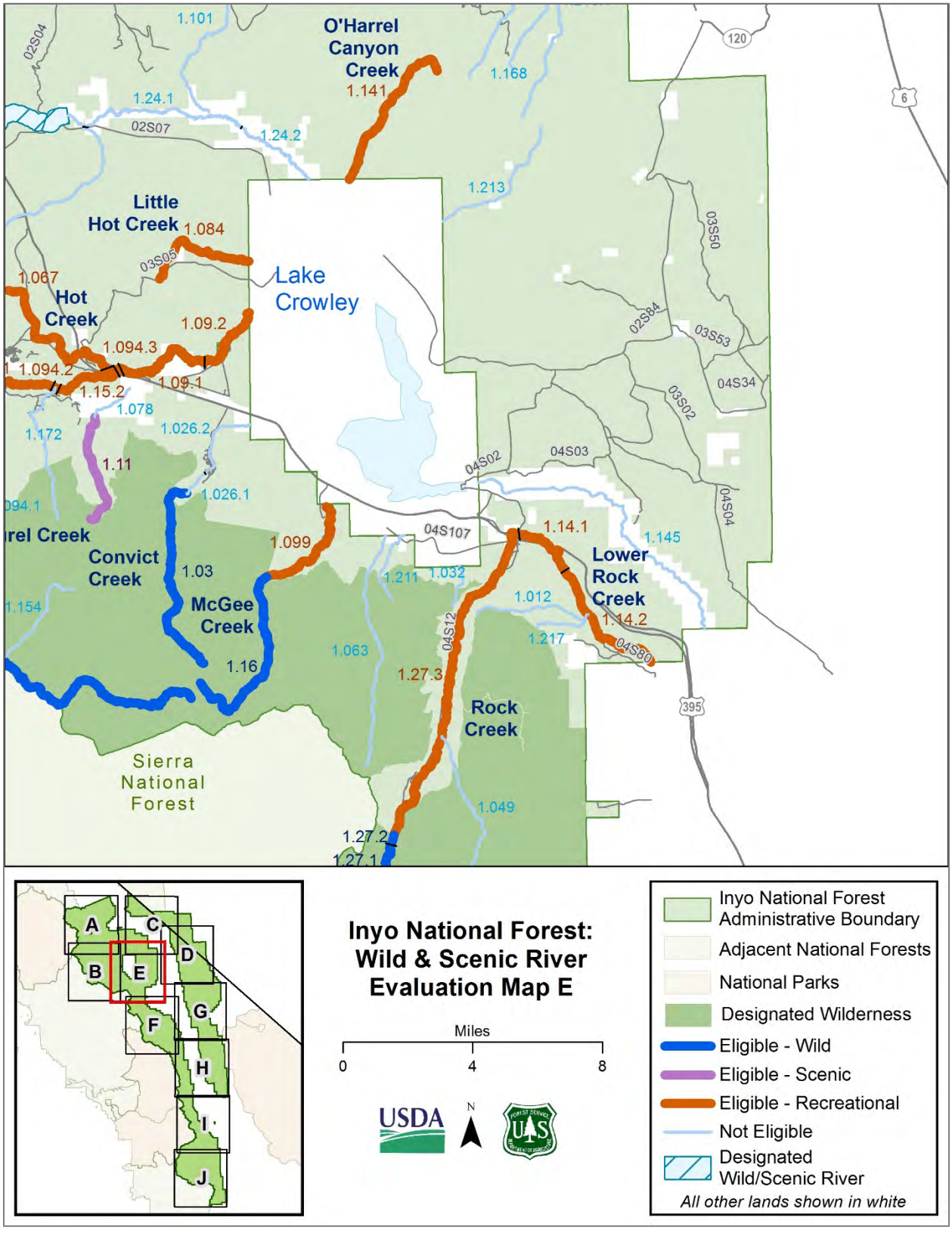

Figure C-6. Wild and scenic river evaluation map E

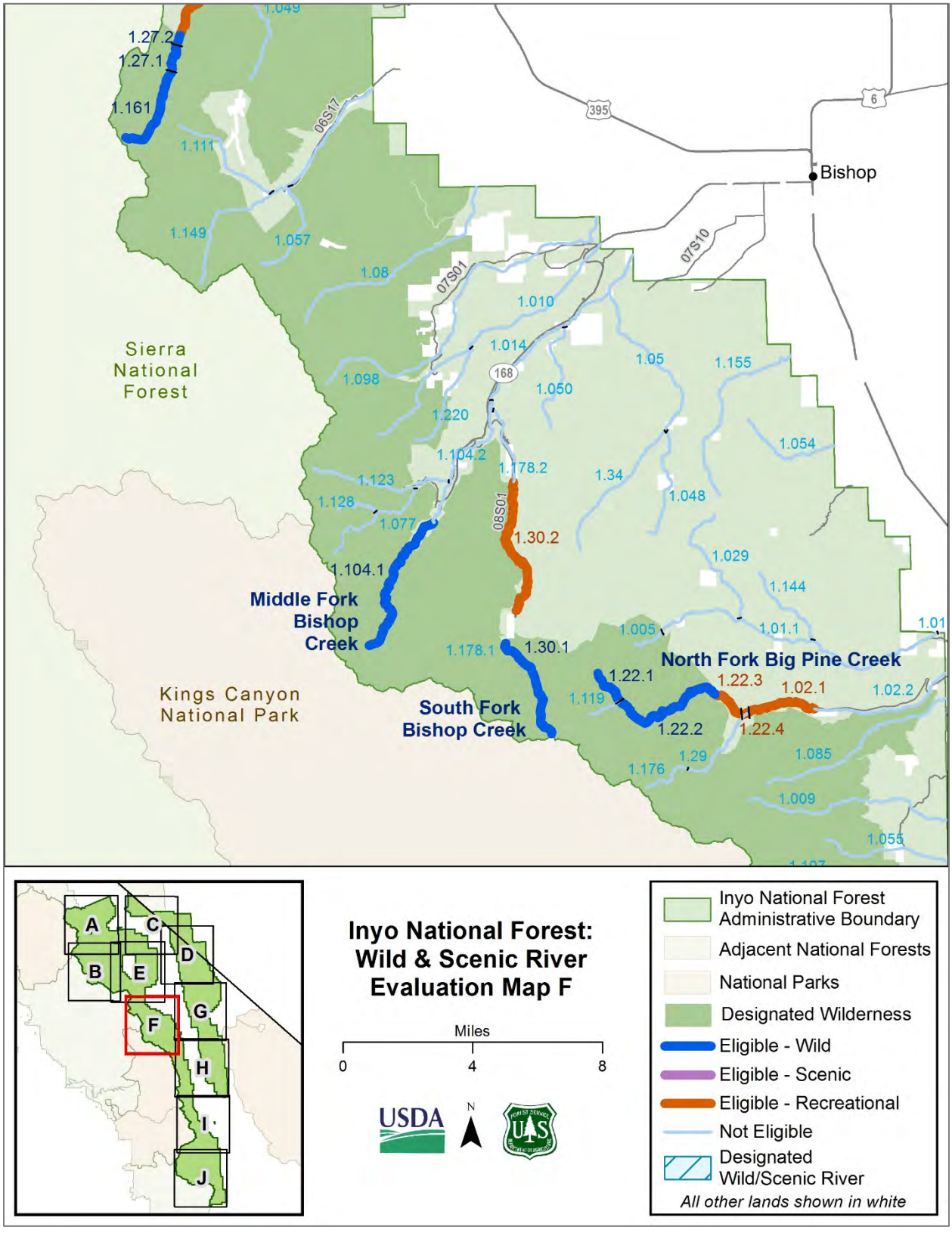

Figure C-7. Wild and scenic river evaluation map F

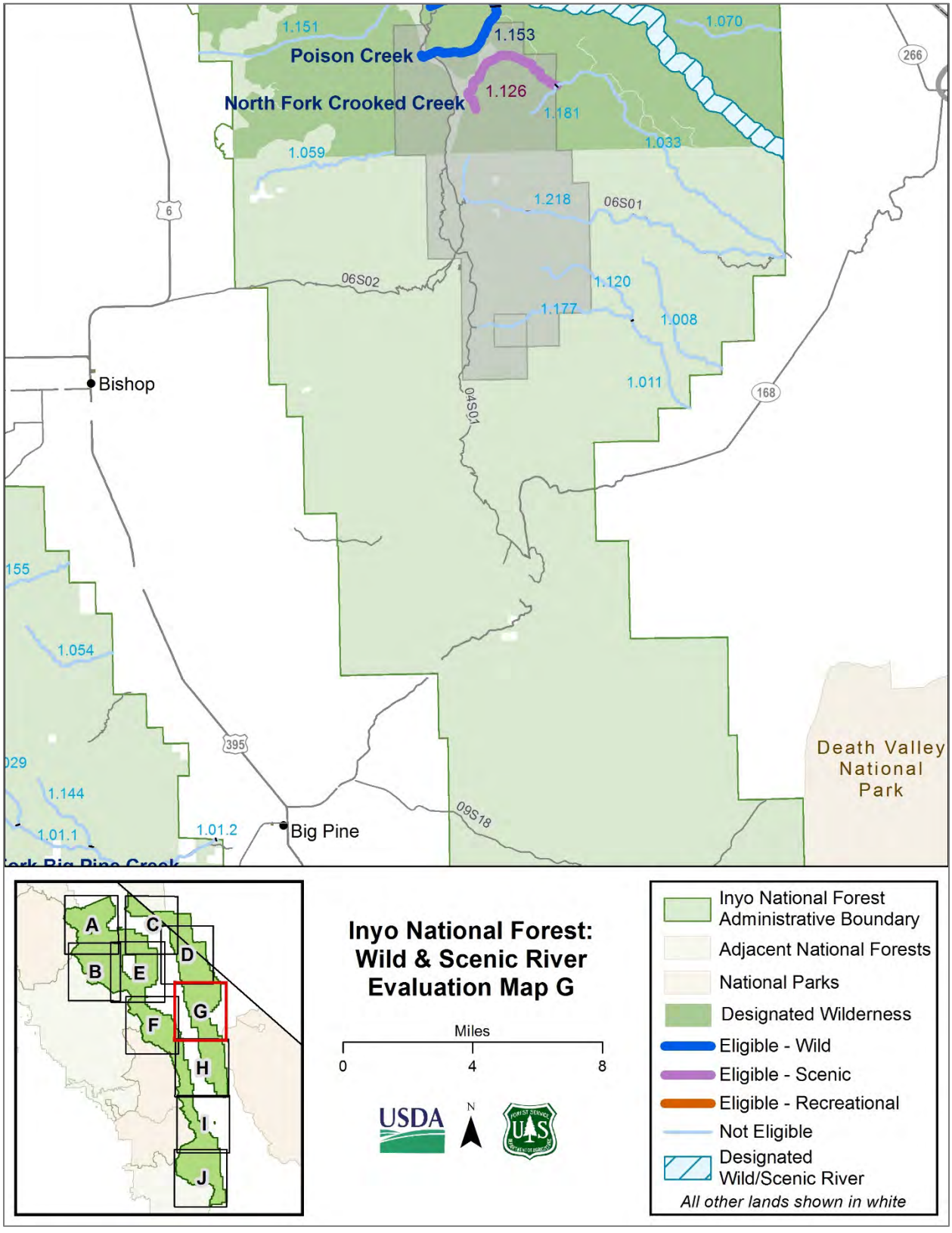

Figure C-8. Wild and scenic river evaluation map G

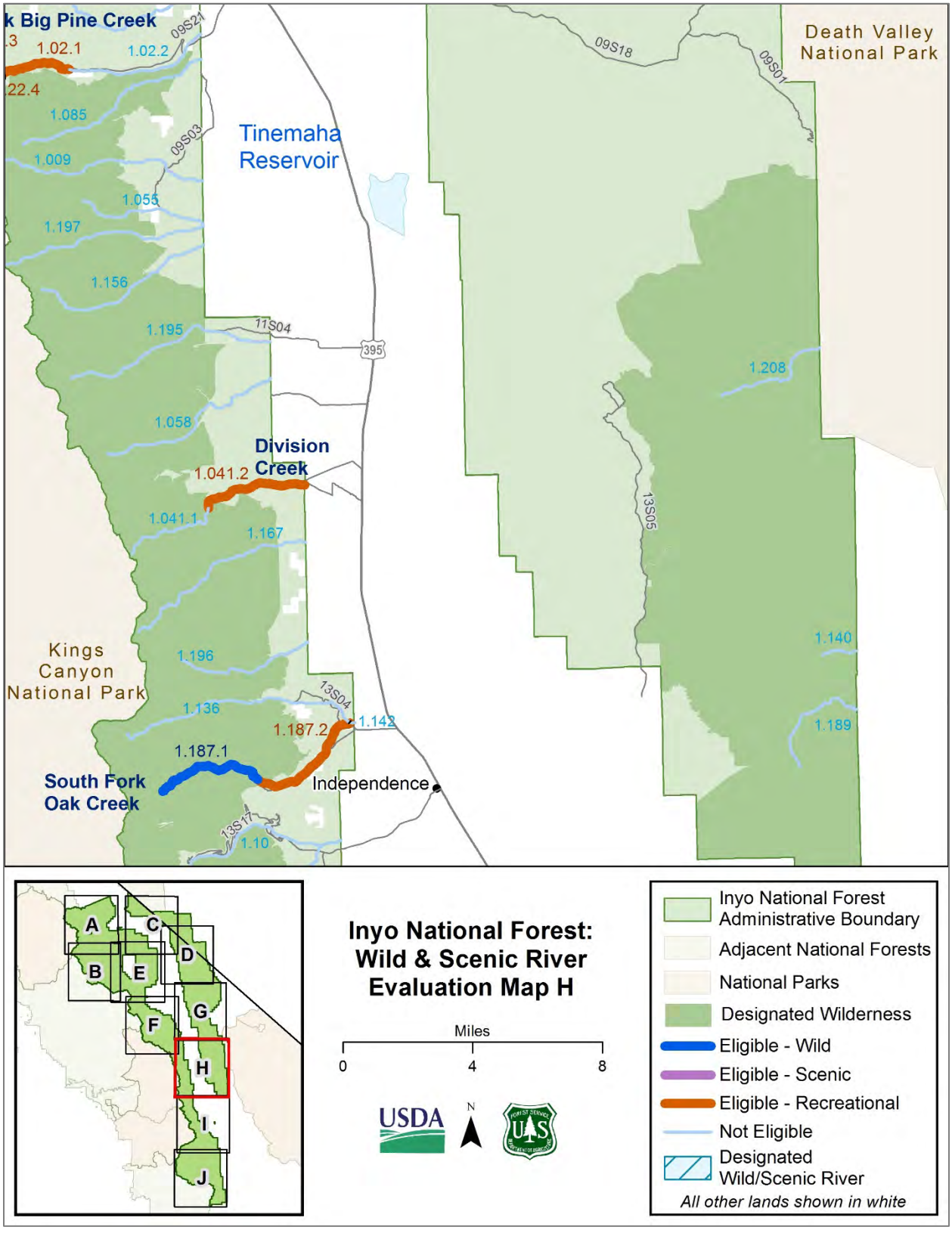

Figure C-9. Wild and scenic river evaluation map H

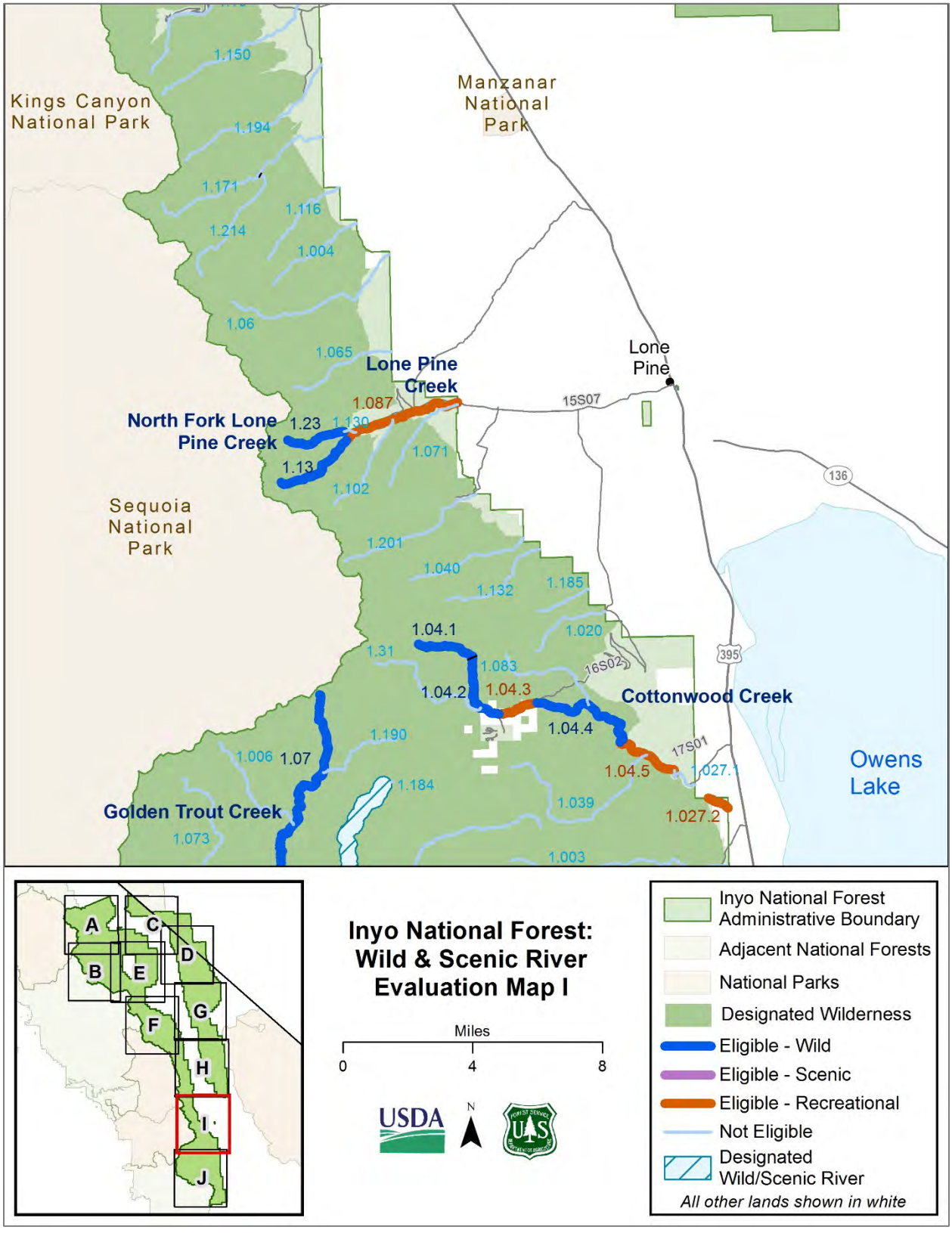

Figure C-10. Wild and scenic river evaluation map I

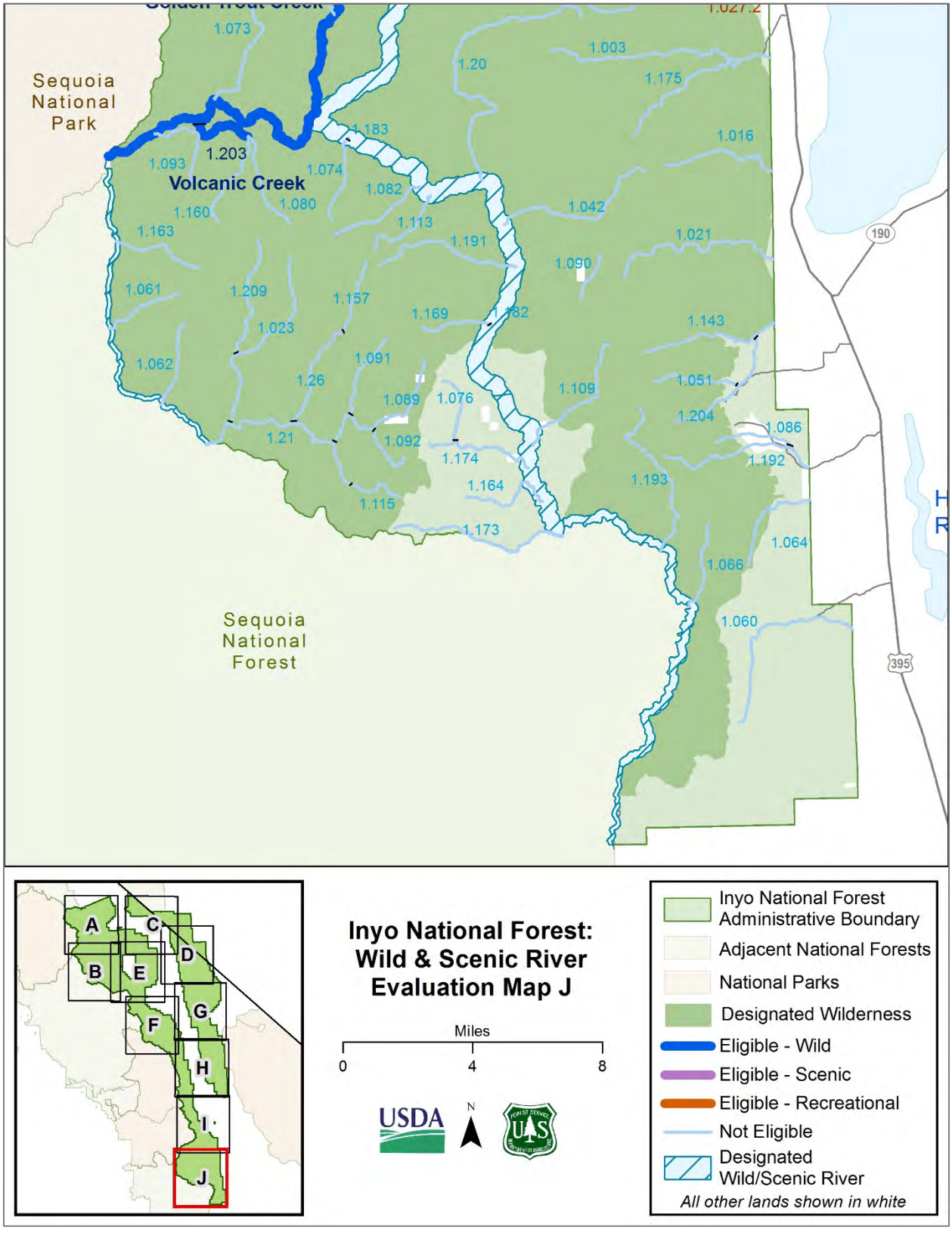

Figure C-11. Wild and scenic river evaluation map J

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Appendix D – Range Management

Status of Livestock Production Rangelands

On the Inyo National Forest, 852,200 acres are available for livestock grazing. Of these, 12 allotments (275,740 acres) are either vacant or in nonuse for resource protection. The remaining acres (576,460 acres) are currently being grazed by cattle or sheep (Table D-1 and Figure D-1).

Determinations of the status of livestock grazing allotments, changes in livestock class, season of use, timing of use, and established utilization standards, are all determined during project-level environmental analysis. The plan components found in the final plan are used as a baseline for determining utilization standards at the project-level. Vacant allotments would need project-level environmental analysis prior to reactivation.

Table D-1. Summary data of current grazing allotments

ID	Allotment	Kind/ Class	Status	Acres
100	Montgomery Pass WH	Wild horse	Active	69,265
123	Mcbride Flat	Cattle	Closed	69,265
300	White Mountain WH	Wild horse	Active	181,820
400	Saline Valley WB	Wild burro	Active	27,764
102	Alger Lake S&G	Sheep	Vacant	2,947
103	Alper's Canyon C&H	Cattle	Active	317
104	Black Canyon C&H	Cattle	Vacant	34,274
105	Bloody Canyon S&G	Sheep	Vacant	5,364
107	Dexter Creek S&G	Sheep	Active	18,557
108	Horse Meadow S&G	Sheep	Vacant	1,531
109	June Lake S&G	Sheep	Active	14,855
111	Long Valley C&H	Cattle	Active	15,539
112	Mono Mills S&G	Sheep	Active	29,101
114	Turner C&H	Cattle	Active	13,257
115	Clark Canyon C&H	Cattle	Active	3,252
120	Mono Sand Flat C&H	Cattle	Active	7,461
121	Mono Lake C&H	Cattle	Closed	1,553
201	Hot Creek C&H	Cattle	Active	10,072
202	Antelope C&H	Cattle	Active	9,085
203	McGee S&G	Sheep	Closed	4,214
204	Sherwin/Deadman S&G	Sheep	Active	29,757
205	Tobacco Flat C&H	Cattle	Active	1,603
303	Buttermilk C&H	Cattle	Active	18,910
304	Casa Diablo S&G	Sheep	Active	49,613
306	Clover Patch C&H	Cattle	Active	9,214
307	Cottonwood C&H	Cattle	Vacant	23,405
308	Crooked Creek C&H	Cattle	Active	40,961
309	Davis Creek C&H	Cattle	Active	10,820
310	Deep Springs C&H	Cattle	Active	24,438
311	Glass Mountain C&H	Cattle	Active	987
312	Indian Creek C&H	Cattle	Vacant	16,781
314	McMurry Meadows C&H	Cattle	Active	9,753
315	Perry Aiken C&H	Cattle	Vacant	29,386
316	Coyote C&H	Cattle	Active	49,758
317	Rock Creek S&G	Sheep	Active	13,131
319	Shannon Canyon C&H	Sheep	Active	10,152
320	Taboose Creek C&H	Cattle	Active	4,199
321	Trail Canyon C&H	Cattle	Active	27,033
322	Tres Plumas C&H	Cattle	Vacant	40,216
323	Watterson Meadow C&H	Sheep	Active	15,956

ID	Allotment	Kind/ Class	Status	Acres
325	Wilfred Creek C&H	Cattle	Active	5,229
328	Queen Valley C&H	Cattle	Vacant	15,943
350	Fish Creek S&G	Sheep	Closed	25,765
401	Alabama Hills C&H	Cattle	Active	1,837
402	Ash Creek C&H	Cattle	Active	10,850
403	George Creek C&H	Cattle	Active	1,869
404	Independence C&H	Cattle	Active	15,916
405	Mazourka C&H	Cattle	Active	16,794
406	Monache C&H	Cattle	Active	48,573
407	Mulkey C&H	Cattle	Active	18,622
408	Olancha C&H	Cattle	Active	14,734
409	Templeton C&H	Cattle	Vacant	43,641
410	Tunawee C&H	Cattle	Active	4,250
412	Whitney C&H	Cattle	Vacant	44,972

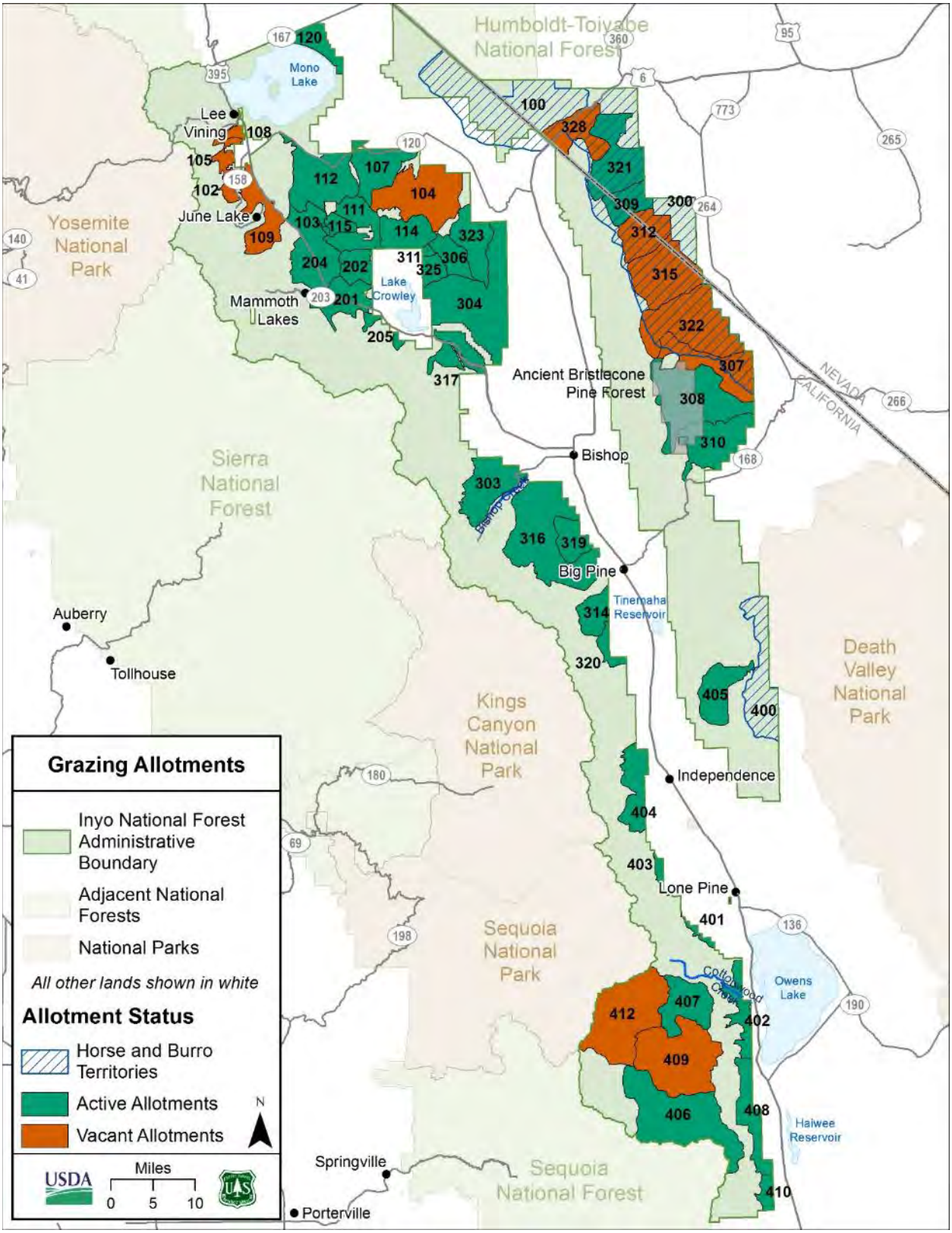

Figure D-1. Livestock grazing allotments; wild horse and burro territories on Inyo National Forest 2017

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Appendix E – Consistency with Other Planning Efforts

Introduction

The 2012 Planning Rule regulations (36 CFR 219.4(2)) require national forest planners to review the planning and land use policies of local governments, where relevant to the plan area. This appendix displays the results of this review.

The review included consideration of:

- The objectives of local governments, as expressed in their plans and policies;
- Opportunities for the plan to address the impacts identified or to contribute to joint objectives; and
- Opportunities to resolve or reduce conflicts, within the context of developing the plan's desired conditions or objectives.

County Governments

The Inyo National Forest occurs within seven counties: Fresno, Inyo, Madera, Mono, and Tulare Counties in California and Esmeralda and Mineral Counties in Nevada. County plans can be used as a source of information on the history of land use within the region, patterns of development, desired conditions, and current county land use goals, objectives, and policies. County governments hold no legal authority over independent jurisdictions such as Federal and State lands, incorporated cities and towns, or Native American Tribal reservations.

County land use within the planning area ranges from traditional uses such as farming and ranching in rural areas (Inyo, Mono, Esmeralda, and Mineral Counties) to denser concentrations of residential, industrial, and commercial uses in and around suburban and urban areas (Fresno and Madera Counties). One of the common themes is how, and whether, private owners and public land managers can manage the competing priorities of resource conservation and economic development; in particular, how to cope with the growing demands for housing and recreation while ensuring preservation of a shrinking natural resource base that contributes to the Eastern Sierra and western Nevada's highly valued rural character.

Fresno County

In reviewing the Fresno County General Plan for Agriculture and Land Use (2000), there were no policies or elements that pertained to the Inyo National Forest or would conflict with the Inyo National Forest revised plan.

Inyo County

Inyo County was a cooperating agency with the Inyo National Forest and this relationship was defined in the Memorandum of Understanding dated June 10, 2014. Throughout the plan revision process, the County provided local economic and social information that was used in the analysis of effects to those resources as described in this environmental impact statement. The Inyo County Board of Supervisors identified the goals from the General Plan that they felt needed to be considered during plan revision. They also provided additional priorities that they felt were related to plan revision. The following section displays these goals and priorities and how the

Inyo National Forest revised plan addresses or blends with these goals. No conflicts between the Inyo County Plan goals and priorities and the components of the revised plan have been discovered.

Inyo County Goals and Policies Related to the Inyo National Forest Revised Plan

Policy Gov-3.1: No Net Loss

The County shall work with Federal and State agencies, local districts, utilities (e.g., LADWP), and Native American tribes to encourage that land exchanges have a net positive impact on the County. In its evaluation, the County may consider factors such as impacts on the County's tax base and revenues, orderly community growth, future development, future revenues and/or other gains, and impacts on the environment, both natural and created.

Policy Gov-3.2: Private Land Increase

The County shall work with federal and state agencies, local districts, and utilities to find opportunities to expand private land ownership in the County through land transfers and other mechanisms.

Policy Gov-3.3: Land Release Locations

The County shall work with federal and state agencies, local districts, and utilities to target desired locations for land releases to private ownership.

Policy Gov-4.1: Federal Land Dispositions and Acquisitions

It is the policy of the Board that the design and development of all federal and state land dispositions and acquisitions, including land adjustments and exchanges, be carried out to the benefit of the citizens of the planning area to ensure the following.

a. That the County property tax base shall be maintained unless the Board determines there is an overriding benefit to the County.

b. That the private property interests including, but not limited to, land patents, drilling rights, mining claims, easements, rights-of-way and forage rights are protected and enhanced.

c. That residents within the planning area shall suffer no adverse aggregate economic impacts.

d. That incentives be developed to provide an increase in local economic development by increasing, where possible, the amount of private and non-federal and non-state land within the planning area.

e. That private use of federal and/or state controlled land within the planning area be increased in order to enhance opportunities for local economic development.

f. That federal and/or state land agencies are discouraged from acquiring any private lands or rights in private lands within the planning area without first coordinating with the County.

g. That federally and/or state managed lands that are difficult to manage or which lie in isolated tracts, or that could contribute to orderly expansion of existing communities should be considered for exchange or sale to private ownership.

h. That the County be notified of, consulted about, and otherwise involved in all federal and state land adjustments in the planning area. The Board may review all proposed changes to determine if the proposals are in the best interest of the County.

i. That before federal and state agencies change land uses, impact studies on land uses are conducted at the expense of the agency proposing the change and necessary mitigation measures adopted in coordination with the County. Impact studies should address community stability, local custom and culture, flood prone areas, access, or any other issue identified as a concern to the County.

j. Due to the extensive state and federal ownership in the County, it is noted that the management of these areas should include: provision for continued and improved access through and within the County; continued provision of public recreational facilities and access; multi use management where applicable; and interconnection or coordination of state, federal, and local facilities and programs when possible.

How the Inyo National Forest Plan Considered These Components:
Management direction for land exchanges can be found in the "Lands" section of the plan. Plan components in this section have been incorporated from the 1988 Land and Resource Management Plan. These plan components do not prohibit land exchanges with the County, but rather display the priorities in which land exchanges may be considered. The Inyo National Forest would continue to work with the County on any proposed land exchanges.

Policy Gov-4.2: Economic Development

With more than 98 percent of the land area of Inyo County owned by the federal, state and city governments, it is clear that the economic viability of the County is inextricably tied to operational decisions made on public lands. Among other policies contained in the Economic Development Element are:

a. The County shall encourage public agencies to develop new tourist serving facilities or otherwise enhance their capacity to serve visitors on the public lands they manage.

b. Encourage public land management and service agencies, including BLM, USFS, National Park Service (NPS), Caltrans, and LADWP (Los Angeles Department of Water and Power) to increase their capacity to serve visitors on properties they manage.

How the Inyo National Forest Plan Considered These Components:
The Inyo National Forest recognizes the importance economic sustainability to the local economy and the plan includes many plan components that address economic development. The information in the general plan was considered when creating new plan components in the "Local Communities" section of the plan. These plan components can be found here:

- LOC-FW-DC 01, 02, 03, 05, and 07
- LOC-FW-DC 01, 02, 03, and 04.

5.2.3 Economic Development: Economic Development Issues

Work closely with both public and private landowners and operators to ensure expanded tourism opportunities and to ensure proper long-term management of the County's lands and water.

How the Inyo National Forest Plan Considered These Components:
These components were considered in the "Sustainable Recreation" sections of the plan, both forestwide direction and within the Sustainable Recreation Management Areas. Pieces of the

"Local Communities" section also address the work needed with local governments for tourism opportunities. The watershed, riparian conservation area, and conservation watersheds plan components address the sustainability and management of water resources on the national forest.

Goal ED-1

Promote increased capacity to serve tourists within the County's established urbanized areas, and in those areas with established tourist attractions.

How the Inyo National Forest Plan Considered These Components:
Addressing capacity issues was considered when developing the General Recreation Area. This area offers the opportunities for expansion of recreational opportunities, if additional capacity is needed, or to address resource impacts from high-use areas, such as within the Destination Recreation Areas.

Circulation Element: Implementation Measure 9.0

Work with Federal land management agencies and LADWP to coordinate trail efforts and ensure connections between trial systems in federally managed lands and Inyo County communities and locations of interest.

How the Inyo National Forest Plan Considered These Components:
The plan considers the cooperation of multiple agencies and land-owners in trail management. This direction is found within the forestwide Sustainable Recreation section, as well as the Volunteers, Interpretation, Partnerships, and Stewardship section of the plan.

- REC-FW-DC 11 and 12;
- REC-FW-GOAL 03, 08, and 10;
- VIPS-FW-DC 01 and 02; and
- VIPS-FW-GOAL 04

The plan did consider and incorporate the need to ensure connections between trail systems on federally managed lands and Inyo County communities with the inclusion of REC-FW-DC 12, which states: Trails provide access to destinations, provide for opportunities that connect to a larger trail system, provide linkage from local communities to the national forest, and are compatible with other resources.

Policy AG-1.6

Support the continued use and expansion of public lands for agricultural operations.
The plan allows for the continuation of multiple uses, including livestock operations on the Inyo National Forest.

Goal AQ-1

Provide good air quality for Inyo County to reduce impacts to human health and the economy.
Air quality plan components address the needs to manage for ecological restoration while adhering to air quality standards and the importance of addressing human health issues and impacts to local economies.

Goal WF-1

Prevent wildfires and provide public safety from wildfire hazards.

How the Inyo National Forest Plan Considered These Components:
The Strategic Fire Management Zones help support decisionmakers before a fire ignition occurs by pre-assessing the risk and benefits from wildland fire to areas on the landscape. Fire suppression is an available tool within all these fire zones. The forest would continue to work with adjacent landowners and agencies in fire suppression and management efforts for protection of public health and safety.

Inyo County Priorities Related to the Inyo National Forest Plan Revision

Access:

A sustainable road system should be implemented to enhance and accommodate vehicular use, packing, hunting, hiking, and other recreational opportunities, as well as mining and other uses of the Inyo National Forest. Mitigation opportunities for potential environmental impacts resulting from increased access should be identified and implemented.

- Roads and trails should be protected and expanded to provide access for recreation and exploration for natural resources and other uses of the national forest, including grazing, mining, and the activities of native peoples (such as gathering).
- Roadless areas should be identified for removal or evaluation if they are not roadless.
- Conflicts between biological resources and human access should be identified and planned for.

How the Inyo National Forest Plan Responds:
The designation, or removal, of authorized roads or trails was not part of the revised planning process.

- The Travel Management decision established authorized roads on the Inyo National Forest and the Travel Analysis Process determined the minimum road system for the forest. Conflicts of resources are addressed at the project-level.
- As noted above, the plan includes many plan components related to access and trails.
- Evaluation of the removal of roadless areas is outside the scope of plan revision.

Vibrant Economy

The Plan should contribute substantially to the local economy due to the impact of the Forest on the County's culture and fiscal health, and should not result in significant socioeconomic impacts.

- Grazing, Mining, Recreation, and other Multiple Uses – the Plan should support and encourage consumptive and sustainable uses of the Forest to contribute to the County's economy and culture.
- Roads and trails should be protected and expanded to provide access for recreation and exploration for natural resources. This type of recreation is an important economic driver for the County.
- Use permits should be facilitated and streamlined for timely issuance and evaluated based upon scientific criteria.
- Mitigation Bank – rather than acquire land for mitigation of environmental impacts, the Plan should promote restoration of degraded public lands to accommodate mitigation of human development elsewhere in the County.

How the Inyo National Forest Plan Responds:
As directed by the 2012 Planning Rule the plan must provide for economic sustainability. The plan addresses this in many ways and in multiple sections of the document.

- Multiple Uses – including grazing and mining: These uses were considered and the plan includes language that provides for the continuation of these uses of the forest ("Rangeland Livestock Grazing" and "Geology and Mineral" sections). New proposed recommended wilderness and wild and scenic river eligibility would not prohibit these uses outright and plan direction does allow for these to continue, as long as they do not hinder the river values identified or the wilderness characteristics.
- Roads and Trails – Please see how these were addressed following other sections of the plan or priorities. The consideration of this priority lead to the development of the Challenging-Backroad Sustainable Recreation Area. These areas of the national forest emphasize the use of roads and trails within remote areas and that this use is an important piece of these areas. Identifying these areas also highlight their importance as economic drivers for the County.
- Use Permits – The plan did not consider this issue because this is in relation to Forest Service policies, which is not managed by a forest plan.
- Mitigation Bank – A plan component was created to consider this county priority. LOC-FW-GOAL 04 states: Continue working with other Federal and State agencies on identifying areas on the Inyo that can be part of restoration mitigation banks. Work with other entities, such as local governments, or private businesses, if they are interested in establishing mitigation banks.

Local Culture

The Plan should support and enhance the culture of local communities to the extent social and cultural issues revolve around the forest.

- Public Safety – access and accommodation for public safety purposes should be of paramount concern in the Plan, including for law enforcement (such as eradicating illegal drug production), fire management and suppression, and search and rescue.
- Provide access to the Forest for gathering activities, prospecting, sightseeing, exploration, and camping.
- Provide a continuing voice to the people living around the forest through their local government representatives.
- Increase use of partnering with local communities, agencies, and non-profits.

How the Inyo National Forest Plan Responds:
The plan directly considered the increase of partnering with local communities, agencies, and non-profits with the creation of the "Local Communities" and "Volunteers, Interpretation, Partnership, and Stewardship" sections of the plan. These sections outline management direction to continue working with our local governments on many issues and developing partnerships to address national forest needs.

Public safety is addressed through law, regulation, and Forest Service policy and this direction will not be repeated in the revised plan.

Madera County

The Inyo National Forest only occupies a small area of Madera County (approximately 50,500 acres) west of Mammoth Lakes in the Reds Meadow area. The majority of this area is within designated wilderness, with only about 4,000 acres outside wilderness. The Agriculture and Natural Resource elements of the Madera County General Plan Policy Document (1995) were reviewed for consistency with the Inyo National Forest plan and are displayed below. Several goals were reviewed, including "Forest Resources," "Wetland and Riparian Areas," "Fish and Wildlife Habitat," "Open Space for the Preservation of Natural Resources," and "Fire Hazards." No conflicts between the Madera County Plan elements and the components of the revised plan have been discovered.

Madera County Goals and Policies Related to the Inyo National Forest Revised Plan

Goal 5B

To conserve Madera County's forest resources, enhance the quality and diversity of forest ecosystems, reduce conflicts between forestry and other uses, and encourage a sustained yield of forest products.

How the Inyo National Forest Plan Considered These Components:
Timber suitability was determined for the Inyo National Forest and can be found in Appendix D of the plan. For the small portion of Madera County, outside of wilderness, about 800 acres are suitable for timber. The plan provides management direction for any timber harvest that may occur on the forest, but this use is not a primary use occurring on the forest. Commercial and personnel fuelwood are the main forest product driver on the national forest. This type of use within the Reds Meadow area of Madera County is extremely limited due to limited access and steep terrain. Large trees have been removed from this area for timber use due to a blow-down event, in which large red fir trees were toppled and available for timber.

Goal 5D

To protect wetland communities and related riparian areas throughout Madera County as valuable resources.

How the Inyo National Forest Plan Considered These Components:
The plan includes management direction for watersheds, riparian conservation areas, and conservation watersheds within the Inyo National Forest. Madera County is included within the Middle Fork San Joaquin River Headwaters Conservation Watershed. All this plan direction allows for the continuance of wetland communities and riparian areas.

Goal 5E

To protect, restore, and enhance habitats that support fish and wildlife species so as to maintain populations at viable levels.

How the Inyo National Forest Plan Considered These Components:
The plan includes management direction for animal and plant species and their habitats (see "Terrestrial Ecosystems and Vegetation" and "Animal and Plant Species" sections of the plan). This direction allows for the continued viability of these species.

Goal 5H

To preserve and enhance open space lands to maintain the natural resources of the county.

How the Inyo National Forest Plan Considered These Components:
The majority of the Inyo in Madera County is designated wilderness (about 50,500 acres). These areas will remain designated as wilderness in the plan. The remaining acres (about 4,000) occur in the Reds Meadow area, which receives high recreation use. There are developed sites (campgrounds, trailheads, a pack station and resort) and these uses will continue. Recreation use will be managed under the Destination Recreation Area direction in the plan. No further development or loss of open space is proposed in the plan.

Goal 6C

To minimize the risk of loss of life, injury, and damage to property and watershed resources resulting from unwanted fires.

How the Inyo National Forest Plan Considered These Components:
The Strategic Fire Management Zones help support decisionmakers before a fire ignition occurs by pre-assessing the risk and benefits from wildland fire to areas on the landscape. Fire suppression is an available tool within all these fire zones. The majority of this area of Madera County is within the Wildfire Maintenance Zone; followed by the General Wildfire Protection Zone; and then the Community Protection Zone.

Mono County

Goals, objectives, and policies from the Mono County General Plan (2013) were considered and are displayed below. The policies related to the Inyo National Forest revised plan were found in the Land Use Element and Conservation and Open Space Element. No conflicts between the Tulare County Plan elements and the components of the revised plan have been discovered.

Mono County Goals and Policies Related to the Inyo National Forest Revised Plan

Objective F

Policy 2

Preserve and protect open space in order to protect natural and cultural resources and to provide for a variety of recreational opportunities.

How the Inyo National Forest Plan Considered These Components:
The plan allows for the continuance of open space within Mono County and provides for a variety of recreational opportunities. These opportunities were considered when developing the Sustainable Recreation Management Areas. These areas identify management for different recreation areas developed based on levels of use and available facilities. The majority of the Inyo in Mono County is within the Challenging-Backroad Recreation Area (about 312,070 acres); followed by the General Recreation Area (22,545 acres); and then the Destination Recreation Area (28,500 acres). Plan direction for these areas can be found in Chapter 3 of the plan, "Sustainable Recreation Management Areas" section.

Objective H

Maintain and enhance the local economy.

How the Inyo National Forest Plan Considered These Components:
The plan considered the importance of maintaining and enhancing the local economies and as such includes the "Local Communities" section of the plan in Chapter 2 that provides

management direction to provide for this. Specific direction that addresses local economies includes:

- LOC-FW-DC 01, 02, 03, and 07
- LOC-FW-GOAL 01, 02, and 03

Goal

Maintain an abundance and variety of vegetation, aquatic and wildlife types in Mono County for recreation use, natural diversity, scenic value, and economic benefits.

How the Inyo National Forest Plan Considered These Components:
The plan provides direction for all vegetation types that occur on the Inyo National Forest in Mono County. This direction also provides for terrestrial and aquatic wildlife as well as plan specific language for some of these species. This direction can be found in the Terrestrial Ecosystem and Vegetation Management and Animal and Plant Species sections of Chapter 2. These systems are available for recreation use, as mentioned above, and scenic values were considered in the establishment of scenic integrity objectives. On the Inyo National Forest in Mono County, the scenic integrity objectives range from very high, high, to moderate, and a few acres are low.

Goal

Preserve and protect agriculture and grazing lands in order to promote both the economic and open space values of those lands.

How the Inyo National Forest Plan Considered These Components:
Livestock grazing is addressed in the plan and this use would continue on the forest in Mono County. The plan does not reduce acres suitable for grazing and the management direction for livestock grazing will continue as described in the 1988 Land and Resource Management Plan.

Goal

Provide for the conservation and development of mineral resources in a manner that minimizes land use conflicts and maintains a quality environment.

How the Inyo National Forest Plan Considered These Components:
The plan carries forward management direction for mineral resources and does not prohibit these activities from occurring on the forest in Mono County.

Goal

Permit the productive and beneficial development of alternative energy sources, including geothermal resources, consistent with the objectives of Goal I and national and local interests.

How the Inyo National Forest Plan Considered These Components:
The plan does not prohibit the development of energy sources, such as geothermal. Plan direction is included for these uses in Chapter 2.

Goal

Protect and enhance the visual resources and landscapes of Mono County.

How the Inyo National Forest Plan Considered These Components:
As mentioned above, scenic integrity objectives were developed in consideration of visual

resources in Mono County. On the Inyo National Forest in Mono County the Scenic integrity objectives range from very high, high, to moderate, and a few acres are low.

Goal

Provide opportunities for outdoor recreation to meet the needs of residents and visitors in a manner that conserves natural and cultural resources.

How the Inyo National Forest Plan Considered These Components:
Recreation uses were considered when developing the Sustainable Recreation Management Areas in the plan. These areas identify management for different recreation areas developed based on levels of use and available facilities. The majority of the Inyo in Mono County is within the Challenging-Backroad Recreation Area (about 312,070 acres); followed by the General Recreation Area (22,545 acres); and then the Destination Recreation Area (28,500 acres). Plan direction for these areas can be found in Chapter 3 of the plan, "Sustainable Recreation Management Areas" section.

Additional plan direction provides for the protection of natural and cultural resources in these recreation areas, as forestwide direction for cultural resources and natural resources (Terrestrial Ecosystems and Vegetation Management, Watersheds, Riparian Conservation Ares, Conservation Watersheds) all apply to these recreation management areas as well.

Goal

Identify, preserve, restore, and interpret cultural resources in Mono County.

How the Inyo National Forest Plan Considered These Components:
Cultural resources were considered in many areas of the plan. This includes the "Cultural Resources" and "Tribal Relations and Uses' sections of Chapter 2 as well as VIPS-FW-DC 06, 08, and 09.

Goal

Achieve and maintain excellent air quality, water quality, and noise quality such that public health is protected and to protect the public from adverse impacts from hazardous waste and materials.

How the Inyo National Forest Plan Considered These Components:
Air quality, especially smoke impacts, were considered in the plan and are included in the "Air Quality" section of Chapter 2. Water quality is addressed in the "Watersheds" section of Chapter 2 as well. This plan direction provides for maintaining air and water quality standards throughout the forest, including within Mono County.

Tulare County

Portions of the Inyo National Forest that occur within Tulare County are in the southern portion of the Inyo National Forest on the Kern Plateau. The majority of this area is within designated wilderness (about 161,900 acres), with the remaining 22,830 acres outside designated wilderness. The Inyo National Forest falls within the "Open Space" designation in the Environmental Resource Management Component of the Tulare County General Plan (2015). Seven elements have been identified in the Environmental Resource Management Component which was considered in this revision process. Portions of the Inyo National Forest also fall within watersheds found within Tulare County which was identified in the Water Resource Component of the General Plan. Three elements were considered in this revision process. These are displayed

below. No conflicts between the Tulare County Plan elements and the components of the revised plan have been discovered.

Tulare County Goals and Policies Related to the Inyo National Forest Revised Plan

ERM-1

To preserve and protect sensitive significant habitats, enhance biodiversity, and promote healthy ecosystems throughout the County.

How the Inyo National Forest Plan Considered These Components:
The plan considers all vegetation types, or habitats, that occur on the Inyo National Forest and provides plan direction at the habitat-level, as well as species-specific level to provide for biodiversity. This direction is found within the "Terrestrial Ecosystem and Vegetation Management" and "Animal and Plant Species" sections of Chapter 2.

ERM-2

To conserve, protect and encourage the development of areas containing mineral deposits while considering values relating to water resources, air quality, agriculture, traffic, biotic, recreation, aesthetic enjoyment, and other public interest values.

How the Inyo National Forest Plan Considered These Components:
Mineral direction is included in the plan and the plan does not prohibit this use on the Inyo National Forest within Tulare County. Forestwide direction for watersheds, air quality, recreation, and other uses would also apply to areas where mineral development may occur in order to protect those values.

ERM-3

To protect the current and future extraction of mineral resources that are important to the County's economy while minimizing impacts of this use on the public and the environment.

How the Inyo National Forest Plan Considered These Components:
As mentioned above, mineral direction in the plan does not prohibit this use, however this use may be minimal within the portion of the Inyo National Forest in Tulare County due to the amount of designated wilderness and limited interest in mineral extraction in this area of the national forest.

ERM-4

To encourage energy conservation in new and existing developments throughout the County.

How the Inyo National Forest Plan Considered These Components:
The plan considers energy conservation of the Inyo's facilities and includes direction to address this in the desired condition INFR-FW-DC 02.

ERM-5

To provide a parks, recreation, and open space system that serves the recreational needs of County residents and visitors, with special emphasis on recreation related to Environmental Resource Management.

How the Inyo National Forest Plan Considered These Components:
Recreation opportunities and uses were considered when developing the Sustainable Recreation Management Areas in the plan. In Tulare County, the areas outside designated wilderness are included in the General Recreation Area.

ERM-6

To manage and protect sites of cultural and archaeological importance for the benefit of present and future generations.

How the Inyo National Forest Plan Considered These Components:
The plan considers cultural and Tribal importance and provides direction for these in the "Cultural Resources" and "Tribal Relations and Uses" sections of Chapter 2.

ERM-7

To preserve and protect soil resources in the County for agricultural and timber productivity and protect public health and safety.

How the Inyo National Forest Plan Considered These Components:
Management direction for soils can be found in the "Watersheds" section of Chapter 2. Timber suitability was determined for the Inyo National Forest and within Tulare County very little of the areas outside wilderness were determined suitable for timber. This is due to the vegetation types present within these areas.

WR-1

To provide for the current and long-range water needs for the County and for this protection of the quality and quantity of surface and groundwater resources.

How the Inyo National Forest Plan Considered These Components:
Management for water can be found in several areas of the plan, this includes the "Watersheds," "Riparian Conservation Areas," and "Conservation Watersheds" sections. This portion of the Inyo National Forest is included in the South Fork Kern River Headwaters Conservation Watershed.

WR-2

To provide for the current and long-range water needs of the County and for the protection of the quality of surface water and groundwater resources.

How the Inyo National Forest Plan Considered These Components:
See above.

WR-3

To provide a sustainable, long-term supply of water resources to meet domestic, agricultural, industrial, and recreational needs and to assure that new urban development is consistent with available water resources.

How the Inyo National Forest Plan Considered These Components:
In developing Conservation Watersheds, an important element considered for this management area was the long-term benefits of downstream uses of water, this includes for recreational, domestic, and agricultural purposes. The South Fork Kern River Headwaters Conservation Area was chosen because it offers these downstream beneficial uses and management direction would

allow for the continuance of maintaining the functional watersheds that provide these beneficial uses.

Esmeralda County

The Esmeralda County Public Lands Policy Plan (2013) and Master Plan (2011) were considered during the plan revision process. The "Economic Activity and Development" section of the Master Plan and the majority of the policy sections in the Public Lands Plan are included below, as well as how the Inyo National Forest revised plan responds to these policies. No conflicts between the Esmeralda County Plan elements and the components of the revised plan have been discovered.

Esmeralda County Goals and Policies Related to the Inyo National Forest Revised Plan

Master Plan: Economic Activity

1-1

The entire county shall be kept open for prospecting, mining, agriculture, and related activities.

How the Inyo National Forest Plan Considered These Components:
Multiple uses were considered in the plan and are included in the "Geology and Minerals," "Rangeland Livestock Grazing," "Energy," and "Timber and Other Forest Products" sections of the plan in Chapter 2.

1-5

Any designation of any public lands for any non-public purpose is opposed, including but not necessarily limited to designations for Wilderness, Wilderness Study Area, or Wild Land.

How the Inyo National Forest Plan Considered These Components:
As required by the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976 (16 U.S. C. 1600 *et seq.*) the 2012 Planning Rule establishes the regulations for developed land management plans for all National Forest System lands (36 CFR Part 219). Within these regulations for revising a forest plan, the national forest must "Identify and evaluate lands that may be suitable for inclusion in the National Wilderness Preservation System and determine whether to recommend any such lands for wilderness designation." (36 CFR 219.7 (2)(v)).

The Inyo National Forest has followed the regulations and completed a wilderness evaluation process (Appendix B of this document) and did evaluate several polygons within Esmeralda County as recommended within alternative C: McBride Flat, Pizona-Truman Meadows, and Marble Creek.

These areas are not being recommended as wilderness under Alternative B-modified and therefore the plan is consistent with the Esmeralda County's language in regards to designating additional wilderness areas.

1-11

Agriculture, e.g., farming and ranching, provide both sustainable revenues and employment. Existing grazing permits should be continued. In those areas where there is a conflict between

wildlife (e.g., antelope, deer, and bighorn sheep) or cattle with wild horses or burros, a reasonable removal and management of the wild horses or burros is required.

How the Inyo National Forest Plan Considered These Components:
Plan direction did consider wild horses and burros, but all decisions on wild horse management would be made at the project-level or within separate wild horse and burro management plans. Plan direction included for wild horses and burros includes:

- DA-WHT-GOAL 01 - Continue working with other agencies and Forest Service units, such as the Bureau of Land Management and the Humboldt-Toiyabe National Forest, and other partners or collaborative groups to manage wild horse herds or in the development of wild horse management plans.
- Potential Management Approach - Continue to monitor wild horse populations to determine numbers and use.

Public Lands Policy Plan: Management of Public Lands

2-1

Support Esmeralda County's concept of Multiple Use Management as an overriding philosophy for management of the public lands based on multiple use and sustainable yield concepts, and in a way that will conserve natural resources.

How the Inyo National Forest Plan Considered These Components:
Multiple uses were considered in the plan and included in the "Geology and Minerals," "Rangeland Livestock Grazing," "Energy," and "Timber and Other Forest Products" sections of the plan in Chapter 2. Other plan direction that would apply when these uses occur, in order to conserve natural resources and limit impacts, include the "Ecological Sustainability and Diversity" section of Chapter 2 and the "Cultural Resources" and "Tribal Relations and Uses" sections of Chapter 2 under the "Social and Economic Sustainability" and "Multiple Uses" section.

2-2

Protect and preserve:

- The quality of the environment and wildlife habitat;
- Economic, cultural, scenic, historical, and archeological values.

How the Inyo National Forest Plan Considered These Components:
Wildlife habitat is considered in several sections of the plan, this includes the "Terrestrial Ecosystem and Vegetation Management," "Animal and Plant Species," "Watersheds" sections of Chapter 2 and the "Riparian Conservation Area" section of Chapter 3.

Economic considerations are included in the "Local Communities" section in which plan direction provides for the continuance to support local economies. Cultural and historical values are included in the "Cultural Resources" section of the plan and are outlined in the "Distinctive Roles and Contributions" section of Chapter 1. Scenic values of Esmeralda County were considered when developing the scenic integrity objectives for the forest. In Esmeralda County these objectives are very high, high and moderate.

Federal Land Transactions

3-1

Specially designated lands (e.g., National Recreation Areas, National Conservation Areas, Wildlife Refuges, Wilderness, State parks, etc.) are valuable assets to the State, the County, and the citizens. Within Esmeralda County, any new specially designated areas should be reviewed carefully in a public forum to determine if they are suitable and beneficial to our citizens.

How the Inyo National Forest Plan Considered These Components:
As required by the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976 (16 U.S. C. 1600 *et seq.*) the 2012 Planning Rule establishes the regulations for developed land management plans for all National Forest System lands (36 CFR Part 219). Within these regulations for revising a forest plan, the national forest must "Identify and evaluate lands that may be suitable for inclusion in the National Wilderness Preservation System and determine whether to recommend any such lands for wilderness designation." (36 CFR 219.7 (2)(v)).

The Inyo National Forest has followed the regulations and completed a wilderness evaluation process (Appendix B of this document) and did evaluate several polygons within Esmeralda County as recommended within Alternative C: McBride Flat, Pizona-Truman Meadows, and Marble Creek. Public comment periods occurred throughout this process and this information was used to update the description of these evaluated areas. This includes updates on information regarding a motorized road within the Marble Creek polygon and other uses such as water rights and infrastructure and historic uses such as mining camps.

These areas are not being recommended as wilderness under Alternative B-modified and therefore the plan is consistent with the Esmeralda County's language in regards to designating additional wilderness areas.

3-2

Government agencies should not acquire additional private lands without first ensuring:

1. That private land is not disposed of unless the disposal clearly benefits the citizens of Esmeralda County;
2. That environmental and cultural values are protected;
3. That private property interests are protected or enhanced;
4. That socioeconomic impacts are duly considered;
5. That acquisitions in any form are fully compensated and proven to meet the highest public need;
6. That the local tax base is note negatively impacted;
7. That due process is guaranteed to all private parties involved in land use controversies, by means that do not demand or create a financial hardship; and
8. That the State and local government within those jurisdictions where the land is located be consulted in regard to the acquisition.

How the Inyo National Forest Plan Considered These Components:
The plan includes direction carried forward from the 1988 Land and Resource Management Plan

regarding lands and land exchanges. This direction can be found in the "Lands" section of Chapter 2 and provides the following direction pertaining to working with local governments:

- LAND-FW-DC 02
- Potential Management Approaches that outline the priority of acquiring lands by exchange, purchase, or donation.

3-7

Leasing of public lands for economic development and public purposes is allowed within Federal law.

How the Inyo National Forest Plan Considered These Components:
Forest management not only is directed by the plan, but also other relevant laws, regulations, and policies. Any leasing of public lands for energy developments or other uses would be in compliance with, not only the plan, but other laws, regulations, or policies.

Agriculture and Livestock Production

4-2

Opportunities for agriculture development on public lands should continue.

How the Inyo National Forest Plan Considered These Components:
The plan considers livestock grazing and provides direction for this use in the "Rangeland Livestock Grazing" section of the plan. The plan also includes an Appendix E that addresses suitable grazing lands on the Inyo National Forest, including in Esmeralda County. The plan does not prohibit or reduce lands suitable for livestock grazing.

4-5

Grazing should utilize sound adaptive and allotment management practices. Esmeralda County supports the periodic updating of the Nevada Rangeland Monitoring Handbook to help establish proper levels of grazing.

How the Inyo National Forest Plan Considered These Components:
The plan provides livestock grazing standards in Chapter 2, which have been carried over from the 1988 Land and Resource Management Plan. A supplement to the Pacific Southwest Region's "Rangeland Analysis and Planning Guide" (R5-EM-TP-004) was also created to describe the methodologies used to determine the rangeland standards provided in the plan.

4-7

Range water rights and improvements such as those associated with seeps, springs, streams, lakes, and wells used by livestock and wildlife should be protected. Encourage cooperation between the public land management agencies and the grazing operator in protecting the riparian values of these water sources.

How the Inyo National Forest Plan Considered These Components:
Water sources such as seeps, springs, streams, and lakes are included in the "Riparian Conservation Areas" direction in Chapter 3 of the plan. Direction specific to grazing and wildlife uses of these areas have been included:

- RANG-FW-GOAL 03

Forestry

5-1

Promote multiple uses of public forest resources to realize sustainable and continuous provisions of timber, forage, firewood, wildlife, fisheries, recreation, and water.

How the Inyo National Forest Plan Considered These Components:
Timber suitability was determined for the Inyo National Forest and within Esmeralda County no acreage was determined suitable. This is due to the types of vegetation that occur on the forest, mainly pinyon-juniper. Other forest products that do occur in this area include commercial and personal fuelwood gathering. Direction for this use can be found in the "Timber and Other Forest Products" section of Chapter 2. Direction for wildlife and fisheries can be found in the "Terrestrial Ecosystem and Vegetation" and "Animal and Plant Species" sections of the plan in Chapter 2. Recreation direction is found within the "Sustainable Recreation" section in Chapter 2 and the "Sustainable Recreation Management Area" section of Chapter 3.

5-2

Support the prompt salvage of forest losses due to fire, insect infestation, or other events.

How the Inyo National Forest Plan Considered These Components:
The consideration of salvaging forests after a fire or insect infestation would be considered at the project-level, but plan direction does provide for this type of activity in the "Terrestrial Ecosystem and Vegetation" and "Timber and Other Forest Products" sections of the Chapter 2. Due to the vegetation that occurs in Esmeralda County on the Inyo, majority is pinyon-juniper woodlands, the use of salvage may not be the preferred method of use, however, that would be determined at the project level.

5-3

Support the management of forests with ecological conditions for a diversity of vegetation communities. Native grass and shrub ecosystems, with no or few invasive species, are preferable to pinyon-juniper monocultures.

How the Inyo National Forest Plan Considered These Components:
The "Terrestrial Ecosystem and Vegetation" and "Invasive Species" sections of Chapter 2 in the plan address the need to reduce invasive species and prevent the expansion or introduction of new invasive or noxious species. Specific direction within sagebrush and pinyon-juniper types can be found here:

- TERR-SAGE-DC 01, 02, and 05;
- TERR-PINY-DC 01;
- INV-FW-DC 02;
- INV-FW-GOAL 01, 04;
- INV-FW-STD 03;
- INV-FW-GDL 01, 02, 03, 04, and 05

5-4

Urge BLM and Forest Service to allow and promote thinning of selected areas. Thinning should be done in a manner so that local citizens derive economic benefit.

How the Inyo National Forest Plan Considered These Components:
The determination of how fuels or vegetation treatments would be developed occurs at the project level, however, plan direction does address the need to include economic benefits when conducting these activities:

- LOC-FW-DC 03 – National Forest uses such as recreation, forest products, mining, and grazing are provided in an ecologically sustainable way that also contributes to economic and social sustainability in local communities.

5-5

Recognize the importance of maintaining a healthy forest and encourage activities that will retain and improve the vigor of these forests.

How the Inyo National Forest Plan Considered These Components:
Plan components developed for ecological sustainability and diversity can be found in the "Ecological Sustainability and Diversity" section of the plan in Chapter 2.

Public Lands Policy Plan

6-2

No public lands shall be designated as Wilderness, Wilderness Study Area, Lands with Wilderness Characteristics (LWC), Wild Lands, or any such similar designation, since a designation of this type would reduce the multiple use aspect of the land.

How the Inyo National Forest Plan Considered These Components:
As required by the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976 (16 U.S. C. 1600 *et seq.*) the 2012 Planning Rule establishes the regulations for developed land management plans for all National Forest System lands (36 CFR Part 219). Within these regulations for revising a forest plan, the national forest must "Identify and evaluate lands that may be suitable for inclusion in the National Wilderness Preservation System and determine whether to recommend any such lands for wilderness designation" (36 CFR 219.7 (2)(v)).

The forest has followed the regulations and completed a wilderness evaluation process (Appendix B of this document) and did evaluate several polygons within Esmeralda County as recommended within Alternative C: McBride Flat, Pizona-Truman Meadows, and Marble Creek.

These areas are not being recommended as wilderness under Alternative B-modified and therefore the plan is consistent with the Esmeralda County's language in regards to designating additional wilderness areas.

Mineral and Geothermal Resources

7-1

Encourage the careful development and production of Esmeralda County's metal, mineral, and geothermal resources while recognizing the need to protect the environment and ecologic resources.

How the Inyo National Forest Plan Considered These Components:
The plan considers mineral and energy development and included plan direction for these uses in the "Energy" and "Geology and Minerals" sections of Chapter 2.

7-4

Metal, mineral, and geothermal operations should be consistent with best management practices for the protection of the environmental qualities and the multiple uses of public lands.

How the Inyo National Forest Plan Considered These Components:
Any mineral, energy, or geothermal operation would also have to comply with plan direction found in the "Ecological Sustainability and Diversity" section of Chapter 2 and "Area-specific Desired Conditions" section of Chapter 3. These additional plan components address the protection of environmental qualities of the area. Other applicable laws, regulations, and policies would also apply.

7-9

Federal, State, and County governments should cooperate in continuing to provide sources of sand, gravel, topsoil, rock, and other mineral materials for local communities. County, State, and Federal agencies should jointly plan for the efficient development and use of material sites for both the government agencies and the private sector.

How the Inyo National Forest Plan Considered These Components:
Plan direction considers these cooperative efforts in the "Local Governments" section of Chapter 2. Although mineral material sites might not be addressed specifically, the plan direction provides for all activities or uses that might need to have cooperation with other Federal or State agencies, or local governments.

- LOC-FW-DC 01 and 02
- LOC-FW-GOAL 01 and 02

Wildlife

9-3

Support habitat restoration and preservation to improve wildlife habitat when balanced and compatible with other multiple uses.

How the Inyo National Forest Plan Considered These Components:
Wildlife habitat restoration is considered in the plan, with overall direction providing opportunities to do these activities. Desired conditions lay the foundation for these activities, as national forest management must strive to achieve these conditions over time. The consideration of other multiple uses in the development of these projects would occur at the project level.

Recreation and Open Space

13-2

Encourage sustainable recreational use in Esmeralda County with marketing efforts that describe the opportunities available and patronize county communities and businesses.

How the Inyo National Forest Plan Considered These Components:
Sustainable recreation use was considered when developing the Sustainable Recreation Management Areas. Portions of the Inyo National Forest within Esmeralda County have been categorized as Challenging-Backroad Recreation Areas. These areas allow for continued motorized use on authorized roads and maintaining few developed opportunities, such as developed campgrounds or trailheads. Direction for this area can be found in the "Sustainable Recreation Management Areas" section of Chapter 3.

Plan direction considering local economies is provided in the "Local Communities" section of the plan in Chapter 2 (see above).

Wetlands, Riparian Habitat, and Waters of Esmeralda County

14-2

Wetlands, riparian habitat, and waters should be managed in a responsible and balanced manner with other resources.

How the Inyo National Forest Plan Considered These Components:
Plan direction for wetlands, riparian habitat, and waters is considered and found in the "Watersheds" section of Chapter 2 and "Riparian Conservation Areas" and "Conservation Watersheds" sections of Chapter 3.

Fire Management

15-1

Wildland-urban interface fire policies should be practiced. Defensible space should be a responsibility of Federal, state, and local agencies, as well as the private property owner.

How the Inyo National Forest Plan Considered These Components:
The Strategic Fire Management Zones help support decisionmakers before a fire ignition occurs by pre-assessing the risk and benefits from wildland fire to areas on the landscape. Fire suppression is an available tool within all these fire zones. The location of communities within Esmeralda County was considered when developing the Strategic Fire Management Zones. Due to the limited amount of development adjacent to the Inyo National Forest, the majority of the national forest in Esmeralda County was determined to be in the Wildfire Maintenance Zone in the higher elevations of the national forest and within the Wildfire Protection Zone in the lower elevations of the national forest, closest to any developments.

15-7

All fire equipment should be cleaned to assure the equipment is "weed-free" before being dispatched to a fire.

How the Inyo National Forest Plan Considered These Components:
The plan includes language to be used during fire suppression activities to reduce the risk of spreading invasive or noxious species.

- FIRE-FW-GDL 06 and
- INV-FW-STD 01

15-8

Encourage the Federal agencies to develop and implement fire management practices to incorporate thinning, fire use areas, prescribed burns, and reseeding to restore natural flora, while reducing the impact of invasive species.

How the Inyo National Forest Plan Considered These Components:
Management direction for fire within the plan does consider the use of thinning, fire use, prescribed fire, and reseeding. This direction can be found in several areas of the plan, including the "Fire" and "Timber and Other Forest Products" sections in chapter 2 and the Strategic Fire Management Zones section in chapter 3. Any use of these tools in managing for desired

conditions found in the "Terrestrial Ecosystem and Vegetation" section in chapter 2 would have to apply direction for invasive species, found in the "Invasive Species" section in chapter 2 of the plan.

Noxious Weeds and Invasive Species

16-1

Support cooperative weed management programs to control noxious weeds and invasive species, including instituting a revegetation program in areas where weeds are treated.

How the Inyo National Forest Plan Considered These Components:
The plan includes language to address noxious and invasive weeds, including cooperating with local, State and Federal agencies. See INV-FW-GOAL 01 and 04.

16-5

Support the Nevada Weed Free Forage Certification program. Any hay being transported for feed on Esmeralda County public lands shall be from a certified weed free field.

How the Inyo National Forest Plan Considered These Components:
A guideline has been added to the plan that would need support from this portion of the Esmeralda Public Lands Policy Plan, as there is a continued need for obtaining weed-free forage.

- INV-FW-GDL 02: Hay, straw and other crop-related forage or mulch products used for animal feed or bedding, soil stabilization and land rehabilitation, or other purposes should be certified by California or Nevada or the North American Invasive Species Management Association (NAISMA) standards as being weed-free to prevent unintentional introduction of invasive species. Deviations from this guideline may be approved on a case-by-case basis when certified weed-free material is not reasonably available, in consultation with the Inyo National Forest Invasive Species Coordinator.

16-6

Federal and State agencies should investigate and treat noxious weeds and invasive species as soon as they are detected on public lands in the County, before those noxious weeds and invasive species develop an infestation. Proactive treatment at first detection will cost much less than treatment of established populations.

How the Inyo National Forest Plan Considered These Components:
The Inyo National Forest has brought forward direction to add the ability to address new detections of noxious weeds. Although the actual treatment of weeds would be determined at the project level, the plan has created a foundation for these activities to occur:

- INV-FW-STD 03 - Use an integrated pest management approach in the planning and implementation of all projects and activities.

Habitat Conservation

24-1

Promote proactive habitat conservation measures to improve the habitat of native beneficial species.

How the Inyo National Forest Plan Considered These Components:
Within the "Terrestrial Ecosystem and Vegetation" section of the plan, desired conditions address the needs of wildlife species, not just at-risk species, but other beneficial species such as deer.

- TERR-FW-DC 06: The landscape contains a mosaic of vegetation types and structures that provide habitat, movement and connectivity for a variety of species including wide-ranging generalists such as bear, mountain lion, and deer; more localized, semi-specialists such as ground-nesting, shrub-nesting, and cavity-nesting birds and various bats; and specialists such as old forest and sagebrush-associated species.

Other direction to address the need to provide habitat for beneficial species can be found in the "Rangeland Livestock Grazing" section:

- RANG-FW-STD 06: Account for mule deer forage when determining livestock animal unit months on key deer winter range and other important habitats such as migration routes, holding areas, and fawning areas.

Mineral County

In reviewing the Mineral County Open Space (2010) and Land Use Master Plans (2006), there were no policies or elements that pertained to the Inyo National Forest or would conflict with the Inyo National Forest revised plan.

Appendix F – Persistence Analysis for Species of Conservation Concern

Introduction

2012 Planning Rule Framework for Species Persistence Analysis

The 2012 Planning Rule[3] requires the forest plan to include plan components,[4] to "maintain or restore": (1) "the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area"; and
(2) "the diversity of ecosystems and habitat types throughout the plan area."

Under 36 CFR 219.9(b)(1), the responsible official (here the Forest Supervisor for the Inyo National Forest) must determine whether the plan components required by 36 CFR 219.9(a) provide the ecological conditions necessary to "contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern[5] within the plan area." The Planning Rule sets forth three possible outcomes of the responsible official's analysis of plan components with respect to species of conservation concern. Additionally, a fourth outcome may arise when the planning unit has developed a set of ecosystem based plan components it thinks will provide for species persistence, but also provides supplementary species-specific plan components for greater emphasis and clarity (all four determinations are presented in the "Determination" section below).

a. The responsible official may find that the plan components required by 36 CFR 219.9(a) are sufficient to provide the ecological conditions necessary to maintain a viable population of each species of conservation concern within the planning area. 36 CFR 219.9(b)(1).
b. The responsible official may determine that the plan components required by 36 CFR 219.9(a) are insufficient to provide the ecological conditions necessary to maintain a viable population of each species of conservation concern within the planning area, and that "additional, species-specific plan components, including standards or guidelines, must be included in the plan to provide such ecological conditions in the plan area." 36 CFR 219.9(b)(1).
c. The responsible official may determine "that it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of a species of conservation concern in the plan area." If the responsible official makes this determination, it shall: (1) document the basis for the determination; and (2) "[i]nclude plan components, including

[3] 36 CFR 219.9(a)
[4] The 2012 Planning Rule sets forth five required plan components (desired conditions, objectives, standards, guidelines, and suitability of lands) and one optional plan component (goals). 36 CFR. 219.7(e)(1)–(2). 36 CFR 219.7(f)(1)–(2) sets forth other required and optional content in the plan.
[5] A "species of conservation concern" is defined as "species, other than federally recognized threatened, endangered, proposed, or candidate species, that is known to occur in the plan area and for which the regional forester has determined that the best available scientific information indicates substantial concern about the species' capability to persist over the long-term in the plan area." 36 CFR 219.9(c).

> standards and guidelines, to maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range," in coordination with other Federal, State, Tribal, and private land managers.[6]

This species persistence analysis documents the rationale for the responsible official's determination for each species of conservation concern in the plan area, including: (1) the plan components required by 36 CFR 219.9(a) are sufficient to provide the ecological conditions necessary to maintain a viable population of that species of conservation concern within the planning area; or (2) additional, species-specific plan components must be included in the plan to provide the ecological conditions necessary to maintain a viable population of that species of conservation concern within the planning area; or (3) that it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of that species of conservation concern in the plan area.

"Viable Population" Defined

The Planning Rule defines a "viable population" as "[a] population of a species that continues to persist over the long term with sufficient distribution to be resilient and adaptable to stressors and likely future environments."[7]

The Forest Service Handbook 1909.12, section 23.13c (1)(b) notes that the preamble to the proposed Planning Rule[8] addresses the meaning of the word "population" for planning purposes, explaining: "the individuals of a species of conservation concern that exist in the plan area will be considered to be members of one population of that species.".

The Handbook further defines the words and phrases "persist over the long-term," "sufficient distribution," "resilient," and "adaptable," used in the Planning Rule's definition of "viable population," as follows:

> The words "persist over the long-term" means the species continues to exist in the plan area over a sufficiently long period that encompasses multiple generations of the species, the time interval between major disturbance events, the time interval to develop all successional stages of major habitat types, or the time interval needed for the overall ecosystem to respond to management. Understand that confidence in the evaluations of persistence decreases rapidly as the timeframe of projections increases and that the responsible official will change plan components using plan amendments and plan revisions when the responsible official decides plan components need to be changed because of changed conditions (FSH 1909.12 section 23.13c (1)(c)).
>
> Whether there is "sufficient distribution" of a species should be considered in the context of the species' natural history and historical distribution and on the potential distribution of the habitat within the plan area. Recognize that habitat and population distribution are dynamic over time. Sufficient distribution also implies a distribution that permits individuals to interact within the plan area within the constraints of the species' natural history. Sufficient distribution implies that ecological conditions are provided to support redundancy in numbers such that losing one or some without replacement will still support a viable population. It should not be expected that management of National Forest System lands would provide broadly or evenly distributed habitat throughout a plan area for all species. Furthermore, as long as there is enough habitat in the plan area to maintain a viable population, there is no requirement that habitat to maintain all known

[6] 36 CFR 219.9(b)(2)
[7] 36 CFR 219.19
[8] 77 FR 21217, April 9, 2012

individuals or the maximum possible number of individuals of a species must be available in the plan area (FSH 1909.12, section 23.13c(1)(d)).

The word "resilient" suggests that when disturbance events or stressors result in the local disappearance of individuals or extirpation from an area, recolonization of suitable habitat may occur in the future to facilitate long-term persistence in the plan area (FSH 1909.12 section 23.13c(1)(e)).

The word "adaptable" means that the species is able to adjust to new conditions. Ecological conditions to support the species are distributed in a way that the species may be represented in a variety of locally adapted ecotypes for increased likelihood of persistence in unknown future environments (FSH 1909.12 section 23.13c (1)(f)).

Organization of this Species Persistence Analysis

There are several required plan components and optional plan components and plan content in the plan (such as goals and potential management approaches) that serve as an overall foundation for providing the ecological conditions necessary to support the persistence of species of conservation concern within the plan area. This direction, listed in the section immediately below, includes desired conditions that frame the role of providing necessary ecological conditions within the plan area and includes goals to increase the communication, cooperation, and collaboration with all lands partners to further conservation of at-risk species. Species of conservation concern are a subset of at-risk species. At-risk species also include federally recognized threatened, endangered, proposed, and candidate species. Because the forest plan relies heavily upon desired conditions to frame the movement of the Inyo's ecological conditions over time, it also includes standards and guidelines to ensure project-level, site-specific contributions of the plan area meet needs for at-risk species, and are considered early in a project's environmental planning process.

To document the plan components that provide for the key ecological conditions and address any key threats within the plan area, a species-by-species evaluation follows for each terrestrial and aquatic species of conservation concern. A separate evaluation was prepared for botanical species of conservation concern. For each species there is an evaluation of the ecological conditions and threats in the plan area followed by a listing of the relevant plan components that address each of the key ecological conditions and threats identified. For most species, the ecological conditions needed by at-risk species are adequately addressed by ecosystem plan components, and in many cases, additional species-specific plan components were only needed to provide additional clarity and emphasis. In a few cases, species-specific plan components were essential to species persistence and long-term viability in the plan area.

The plan component coding follows a standard format where the first two parts identify the resource and applicable area for the direction and the third part identifies the type of plan component. All plan components are numbered sequentially in the forest plan, but the numbers do not convey a ranking or priority. Goals are optional numbered plan components and potential management approaches are additional plan content and are not numbered.

Forestwide Plan Components for Species At Risk

Several plan components focus on species-at risk and species of conservation concern, but are not necessarily species-specific. They do, however, add additional emphasis to key ecological conditions for many of those species. While generally broad, these plan components provide for ecosystems and habitat conditions that will be resilient to disturbance (both natural and human caused) and the interrelated effects of climate change. They also mitigate site-specific effects that

might occur during projects or national forest management activities implemented under the land management plan in riparian areas, watersheds, terrestrial ecosystems, recreation areas, and wilderness. They include the following:

Animals and Plant Species

Desired Conditions (SPEC-FW-DC)

02 Habitats for at-risk species support self-sustaining populations within the inherent capabilities of the plan area. Ecological conditions provide habitat conditions that contribute to the survival, recovery, and delisting of species under the Endangered Species Act; preclude the need for listing new species; improve conditions for **species of conservation concern** including addressing threats (e.g. minimal impacts from disease); and sustain both common and uncommon native species.

03 Land management activities are designed to maintain or enhance self-sustaining populations of **at-risk species** within the inherent capabilities of the plan area by considering the relationship of threats (including site-specific threats) and activities to species survival and reproduction.

Standards (SPEC-FW-STD)

01 Design features, mitigation, and project timing considerations are incorporated into projects that may affect occupied habitat for **at-risk species**.

Guidelines (SPEC-FW-GDL)

01 Known nest, roost, or den trees used by **species of conservation concern** or raptors, including surrounding trees that provide beneficial thermal or predatory protection, should not be purposefully removed, with the exception of the unavoidable removal of hazard trees and as required to meet other State or Federal regulatory requirements.

04 Habitat management objectives or goals from approved conservation strategies or agreements should be incorporated, if appropriate, in the design of projects that will occur within **at-risk species** habitat.

05 Water developments (such as a diversion or well) should be avoided near streams or seeps and springs where there is high risk of dewatering aquatic and riparian habitats where **at-risk species** occur.

Terrestrial Ecosystems and Vegetation

Desired Conditions (TERR-FW-DC)

05 Ecological conditions contribute to the recovery of threatened and endangered species, conserve proposed and candidate species, and support the persistence **of species of conservation** concern.

06 The landscape contains a mosaic of vegetation types and structures that provide habitat, movement and connectivity for a variety of species including wide-ranging generalists such as bear, mountain lion, and deer; more localized, semi-specialists such as ground-nesting, shrub-nesting, and cavity-nesting birds and various bats; and specialists such as old forest and sagebrush-associated species.

Conservation Watersheds

Desired Conditions (MA-CW-DC)

01 Conservation watersheds provide high-quality habitat and functionally intact ecosystems that contribute to the persistence of **species of conservation concern** and the recovery of threatened, endangered, proposed, or candidate species.

03 The drainage connections between floodplains, wetlands, upland slopes, headwaters, and tributaries are intact and provide for breeding, dispersal, overwintering, and feeding habitats for **at-risk species.** These areas provide refugia if other areas of the watershed are disturbed by events such as floods, landslides, and fires.

Watersheds

Desired Conditions (WTR-FW-GDL)

01 Minimize the effects of stream diversions or other flow modifications on at-risk species as well as other beneficial uses during relicensing; planning for state and other authorized water use; and water rights. Determine and recommend in-stream flow requirements and habitat conditions that maintain, enhance, or restore all life stages of native aquatic species and that maintain or restore riparian resources, channel integrity and aquatic passage.

All Riparian Conservation Areas

Desired Conditions (MA-RCA-DC)

02 Riparian conservation areas have ecological conditions that contribute to the recovery of threatened and endangered species and support persistence of **species of conservation concern** as well as native and desired nonnative aquatic and riparian-dependent plant and animal species.

Sustainable Recreation

Guidelines (REC-FW-GDL)

01 Avoid locating new recreation facilities within environmentally and culturally sensitive areas, such as **at-risk species** breeding habitat or at-risk plant species habitat.

03 Use integrated resource planning when designing projects to address impacts to **at-risk species habitat** and changing conditions in recreation settings.

Lands

Guidelines (LAND-FW-GDL)

02 Where feasible, bury new or reconstructed power distribution lines (33kV or less) and telephone lines to reduce impacts resources such as scenery and **at-risk species habitat.**

All Designated Wilderness Areas

Desired Conditions (DA-WILD-DC)

08 Forest system trails that access wilderness are part of a high-quality wilderness experience for visitors. Forest system trails meet national quality standards, with minimal deferred maintenance and adhere to the national trail classification system. Trails in wilderness are located in resilient areas, and do not cause adverse impacts to **at-risk species**, water quality, soils, hydrologic connectivity, or cultural resources.

Individual Evaluations – Animals

Background

This section summarizes the key ecological conditions and risk factors for each species of conservation concern, and the plan components that mitigate those risk factors, provide for persistence, and contribute to maintaining a viable population of each species of conservation concern within the plan area.

Information on species distribution, ecological conditions, and threats is largely excerpted from the document "Rationales for Animal Species Considered for Species of Conservation Concern, Inyo National Forest (USDA 2018); additional information on each species of conservation concern, the associated selection process, and full references for best available science can be found in that document and will not be repeated here. A supporting crosswalk, providing the full language for each plan component, threats, and species grouped by key ecological conditions was developed to create this summary.

The following 22 wildlife species of conservation concern are addressed in this analysis:

- Mammals: Nelson desert bighorn sheep (*Ovis Canadensis nelsoni),* Sierra marten (*Martes caurina sierra)*
- Birds: Bald eagle (*Haliaeetus leucocephalus),* bi-state greater sage-grouse (*Centrocercus urophasianus),* California spotted owl (*Strix occidentalis occidentalis),* Great gray owl (*Strix nebulosi),* Mount Pinos sooty grouse - *Dendragapus fuliginosus howardi,* willow flycatcher (*Empidonax traillii*-includes: *Empidonax traillii brewsteri and Empidonax traillii adastus)*
- Amphibians: Black toad (*Bufo exsul);* Inyo Mountains slender salamander (*Batrachoseps campi);* Kern Plateau salamander (*Batrachoseps robustus)*
- Fish: California golden trout (*Oncorhynchus mykiss aquabonita)*
- Terrestrial invertebrates: sierra sulphur (*Colias behrii),* square dotted blue (*Euphilotes battoides mazourka),* Mono Lake checkerspot (*Euphydryas editha monoensis),* Boisduval's blue (*Plebejus icarioides inyo),* San Emigdio blue (*Plebulina emigdioni),* Apache fritillary (Apache silverspot butterfly) (*Speyeria nokomis apacheana),* a cave obligate pseudoscorpion (*Tuberochernes aalbui)*
- Aquatic Insects: Owens Valley springsnail (*Pygulopsis owensensis),* Western pearlshell (*Margaritifera falcate),* Wong's springsnail (*Pyrgulopsis wongi)*

In addition to the summarized analysis for each species below, Table F-25 on page 456 provides a crosswalk to show how plan components meet species-specific habitat needs, and is grouped by the key ecological conditions or habitat elements that species share in common. Categories are not mutually exclusive.

Determination Outcomes

In the individual species rationales that follow, determinations for each species will have one of four possible outcomes:

1. The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the [SPECIES NAME] in the plan area. No additional species-specific plan components are warranted.

2. The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the [SPECIES NAME] in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.
3. The ecosystem plan components may not provide the ecological conditions necessary to maintain a viable population of the [SPECIES NAME] in the plan area. Therefore, additional species-specific plan components have been provided. The combination of ecosystem and species-specific plan components should provide the ecological conditions necessary to maintain a viable population of the [SPECIES NAME] in the plan area.
4. It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the [SPECIES NAME] in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

For each wildlife species of conservation concern, we describe key ecological conditions and threats that occur on the Inyo National Forest, the plan components that alleviate those threats and a summary of why plan components do or do not provide for viability in the plan area as shown in Table F-1. Plan components will not, and cannot, prevent all adverse impacts to individuals of the species, and have been designed to provide for viability of the species at the plan-level only. Optional plan language such as goals and potential management approaches are included in the narratives where needed and provide vision and strategy for improving ecological conditions for species that lack viability in the plan area because it is either not within the inherent capability of the land or outside forest service management authority. The narrative that follows each table highlights key issues and plan components intended to provide for persistence.

Table F-1. Key to individual analyses tables. Key Ecological Conditions: Briefly describes key ecological conditions, including habitat, unique features or requirements for life cycle

Key Threats Persistence identified on the Inyo National Forest	**Ecosystem plan component that alleviates or eliminates key threats (219.19 (a))**	**Additional species-specific plan components that alleviate or eliminate key threats (219.19 (b))**	**Effects Summary**
Key threats identified in the Species of Conservation Concern (SCC) Rationales.	Include all ecosystem-level components that address the threats. DC = Desired Condition OBJ = Objective GOAL = Goal STD = Standard GDL = Guideline	Include any additional species-specific plan components that address the threats not adequately covered by ecosystem-level plan components, or to provide added emphasis/clarity DC = Desired Condition OBJ = Objective GOAL = Goal STD = Standard GDL = Guideline	Summarize how plan components, if implemented, provide the ecological conditions necessary to support species persistence and maintain a viable population of each species of conservation within the plan area.

Assumptions

This document describes and puts into context the current planning regulations and policies that informed the development of the Inyo National Forest Environmental Impact Statement and Land and Resource Management Plan (also referred to as the "forest plan"). The regulations and policies themselves, however, are not directly incorporated into these documents.

A core element for the development of ecosystem based desired conditions for all species, is that management actions that move ecosystem conditions toward the natural range of variation will benefit species persistence. That is, maintaining or restoring ecological conditions and functions similar to those under which native species evolved offers the best assurance against losses of biological diversity and maintains habitats for the vast majority of species in an area, and the further a habitat departs from that historical distribution, the greater the risk to viability of associated species. However, for some species this approach may not be adequate, because the reference condition is not achievable or because of risks not related to habitat. In that case, additional species-specific plan components are added.

For many species, it is currently unknown if a truly viable population does indeed exist on the Inyo National Forest. There may be evidence of individuals, incidental sightings, or species may use the plan area for breeding and dispersal, but it is unclear if there is a breeding population that exists in the plan area over a sufficiently long period that encompasses multiple generations of the species (that is, the number of breeding individuals that may occur on an individual national forest is presumably too small to be considered a viable population). In those instances, the national forest can contribute to ecological conditions that should move toward a desired condition that is within the natural range of variability. This would presumably maintain a viable population to the extent it currently exists or might exist in the future. In addition, for some species, the Forest Service does not have sole management authority over key risk factors. For example, disease spread by animals that wander onto the forest from private land owners, upstream water diversions, or mining activities on adjacent lands. The forest service can contribute to ecological conditions that improve habitat conditions and should support viability in the future once threats outside of forest service control have been addressed.

Determinations - Animal Species of Conservation Concern

Fisher

Determination: It is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Pacific fisher in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Mature coniferous forest, typically more mesic than xeric, with supporting features such as large diameter trees and snags, multi-layered canopies, large down wood, high canopy closure, and structurally diverse and complex understory.

Table F-2 summarizes key threats, plan components, and expected effects on Pacific fisher.

Table F-2. Key threats, plan components, and expected effects on Pacific fisher

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of habitat or habitat connectivity due to management activities such as fuels reduction treatments and timber harvest	TERR-FW-OBJ 01-02 TERR-FW-GDL 01-02 TERR-FW-STD 01 TERR-MONT-DC 01-02 TERR-OLD-DC 01-07 TERR-OLD-GDL 01-02 TIMB-FW-DC 01-03 TIMB-FW-GDL 02-03 DA-WILD-DC 03 INFR-FW-DC 03 FIRE-FW-GDL 01-02 FIRE-FW-STD 02	SPEC-SMPF-DC 01-04 SPEC-SMPF-GDL 01-02 SPEC-FW-DC 01-03 SPEC-FW-STD 01 SPEC-FW-GDL 01, 04	Forestwide ecosystem plan components for Terrestrial Ecosystems, Old Growth, Timber and Animals and Plants provide direction for maintaining habitat in areas where management activities take place by emphasizing heterogeneity, connectivity, and retention of key structural elements including old growth components, snags and trees. A standard for forestwide terrestrial habitat ensures the retention of conifer trees greater than 30 inches in diameter while guidelines ensure fuel reduction treatments minimize mortality of large, old trees and snags and incorporate design features that reduce fire intensity and promote delayed mortality. Objectives provide specific and measureable strategies to move forest composition and structure toward desired conditions, and return natural fire regimes to the landscape further reducing loss of habitat and promoting ecosystem resilience. These restoration based objectives will help keep up with the pace and scale needed to maintain ecological integrity and resist key stressors over time. Species specific guidelines for fisher reinforce ecosystem-level plan components and specifically ensure habitat will be retained during site specific projects; that cover is adequate for fisher prey species, that heterogeneous understory habitat provides denning sites and that project design does not lead to unnatural increases in fisher predation rates. Forest wide standards and guidelines for Animals and Plants promote design features and mitigations that consider needs of all at-risk species during project implementation.

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of quality habitat or habitat connectivity due to climate change or other stochastic events (e.g. wildfire) that lead to losses of mature forest conditions.	TERR-FW-DC 01-06,08-09 TERR-MONT-DC 01-02 TERR-OLD-DC 01-07 FIRE-FW-DC 01	SPEC-SMPF-DC 01-04	Ecosystem level plan components that include desired conditions for Terrestrial Ecosystems, Old growth, and Montane zones help to ensure fishers have adequate habitat for movement, dispersal, feeding, and reproduction at multiple scales that may otherwise be lost due to climate change and other stochastic events such as high severity fire and insect outbreaks. Species specific plan components for fisher provide desired conditions that fisher habitat is intact and well distributed.
Loss of resting/denning habitat and/or disturbance that could lead to denning failure.	TERR-FW-STD 01 TERR-JEFF-DC 04-06	SPEC-FW-GDL 01 SPEC-SMPF-DC 01-04 SPEC-SMPF-GDL 01-03	Plan components ensures species will have large structures and habitat for resting and raising young. Plan components also ensure minimized disturbance to denning female fishers during the breeding season.
Loss of key habitat features such as large diameter trees and snags, multi-layered canopies, large down wood, moderate to high canopy closure and structurally diverse forest.	TERR-FW-STD 01 TERR-RFIR-DC 01-07 TERR-LDGP-DC 01-10 TERR-DMC-DC 01-06 TERR-JEFF-DC 01-03, 07	SPEC-SMPF-DC 04 SPEC-SMPF-GDL 01	Ecosystem level plan components provide for key structural features such as snags and logs and large trees needed for resting and denning. They also provide heterogeneity and complex forest structure, and various seral/structural stages needed to complete different life cycle needs. Fire is maintained as a natural process on the landscape and promotes ecosystem resilience. Species specific plan components ensure that key habitat and habitat elements are broadly distributed in the fisher Core Area.
Insecticide and pesticide use from illegal Marijuana growing sites that contaminate prey species and associated forage.	N/A	N/A	Already covered under existing law. Not within forest service management authority.

Information on Current Distribution of the Species in the Planning Unit

Spencer et al. (2015) and Spencer et al. (2016) describe seven Fisher population core areas in the Southern Sierra Nevada, five of which are occupied, and two of which are currently unoccupied. Fishers on the Inyo National Forest make up a small part of the Core 1 population – or the population on the Kern Plateau. This core is mostly on the Kern Plateau in the southeastern portion of the fisher assessment area and is the only core not on the west slope of the Sierra Nevada. It is largely within Sequoia National Forest, with a small portion on the Inyo National Forest (only 54.5 square kilometers of the 429.5 square kilometers are on the Inyo). The Kern Plateau has unique environmental conditions, due to differences in climate, geology, and vegetation, compared to the west-slope cores (Miles and Goudey 1998). It receives less annual precipitation (about 25-76 centimeters or 10-30 inches) than forests in other cores (about 102-152 centimeters or 40-60 inches), and the vegetation is somewhat more open. Pinyon-juniper woodlands, canyon oak woodlands, and birch-leaf mountain mahogany are a greater component of the vegetation of the Kern Plateau than other portions of the Fisher Assessment Area, and California black oak, an important component of fisher habitat where it occurs, is rare or absent. The lesser accumulation of snow in this core may explain why fishers occupy higher elevations here than elsewhere in the assessment area and why martens (which are more snow-adapted than fishers) are absent (J. Tucker, unpublished data).

Occupancy modeling shows this core area to have the lowest occupancy rates in the region (Zielinski et al. 2013b), suggesting lower population densities here than elsewhere. Twenty-six sample units of the Sierra Nevada bioregional carnivore monitoring occur on the Inyo National Forest. Of these 26 sample units, 4 have detected fisher at various times over the last 15 years (J. Tucker, unpublished data). While reproduction has not been confirmed in this area, genetic analysis of hair samples have detected females multiple times, and in 2012 surveyors detected multiple individuals with genotypes consistent with a mother and two offspring (J. Tucker, unpublished data).

Key Ecological Conditions in Plan Area

Fisher Core 1 is the smallest occupied core area, has the lowest predicted habitat value of any core, and appears to lack potential suitable resting and denning habitat (Spencer et al. 2015). Further, Spencer et al. (2016) model the core as containing no currently suitable fisher cells. Fisher occupancy in Core 1 suggests that the current habitat models are unable to capture both the breadth of habitat that fisher will use, as well as the factors determining habitat selection in the Kern Plateau area, an area that is ecologically distinct from the rest of the fisher range in the Southern Sierra Nevada.

Elsewhere in their range in the Southern Sierra Nevada, Fisher select for mature coniferous forest, typically more mesic than xeric, with supporting features such as large-diameter trees and snags, multi-layered canopies, large down wood, high canopy closure, and structurally diverse and complex understory. Additional research and monitoring are warranted in Core 1 to better understand fisher habitat selection and population characteristics. Spencer et al. (2016) note that “In the meantime, all [habitat] predictions for Core 1 should be considered unreliable.”

Key Threats to Persistence

Any activities or events such as fuel reduction, vegetation management treatments, high-severity fire, and climate change that negatively affect or remove mature forest or key structural elements such as large live and dead trees (large-diameter snags), logs, and coarse woody debris and or cause losses canopy cover. Key structural elements are important for resting and predator avoidance, as well as for denning and raising young. Higher fuel loading, and changes in forest structure and composition associated with fire suppression coupled with a changing climate and related increases in drought and insect outbreaks can cause significant changes in forest structure, function and composition (Meyer 2013).

Threats under Forest Service Control

Land management includes the following key threats:

- Habitat loss (especially loss of denning, resting and foraging habitat, large old trees and dense canopy cover) and disturbance from activities such as vegetation management, timber removal, wildfire, or fuels treatment.
- Habitat loss resulting from climate change and disturbance such wildfire, drought, or insect and disease outbreaks.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and Table F-2 above.

- Terrestrial Ecosystems and Vegetation (Old Forest, Montane Zones, Red Fir, Jeffrey Pine, Lodgepole Pine, and Mixed Conifer)
- Wilderness

Most of the threats for Pacific fisher can be addressed through ecosystem-level plan components that emphasize resilient, connected forests containing the complex structural attributes fishers need for survival and reproduction. However, species-specific plan components have been added in a few instances for greater clarity and emphasis. Loss of old growth habitat and key structural attributes for denning and resting are key threats and desired conditions for Pacific fisher (SPEC-SMPF-DC 01-04) minimize the risk from high severity fire in fisher Core Area 1, ensure overarching desired conditions from terrestrial and riparian vegetation are met and that fisher habitat is well distributed throughout the landscape providing for foraging, denning and resting habitat and connectivity large landscapes. Four guidelines (SPEC-SMPF-GDL 01-03; SPEC-FW-GDL 01) specify projects are designed in a way to minimize disturbance, predation, and provide hiding cover and denning habitat and retention of complex forest structure in key fisher habitat.

Threats Not Under Forest Service Control

- Poisoning of animals form pesticide and insecticide used by marijuana growers

Illegal rodenticide poisons to protect marijuana plantations is a growing area of concern throughout the Sierra Nevada and poses a threat to numerous mammals, including fishers (Gabriel et al. 2012). The impact presents a detrimental effect to population health, survival and status. Marijuana growing activity is extensive, illegal, and neither authorized, funded, nor carried out by the Forest Service.

Summary

Very few fishers currently occur, in a very limited location, on the Inyo National Forest. Connectivity is high between the Inyo and Sequoia National Forests, and between Fisher Core Areas 1 and 2, providing some protection against risks associated with small population numbers. However, the very localized fisher occurrence, combined with loss of larger trees and heterogeneity in pine forests, increased risk to upper montane forest from uncharacteristic stand-replacing fire, insect outbreaks, and warming temperatures create substantial concern about this species ability to persist in the planning unit. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of Pacific fisher within its range. However, limited occurrence data for fisher on the Inyo National Forest, coupled with the very different ecological conditions on the Kern Plateau than the rest of the fisher range in the Southern Sierra Nevada, suggest it is not within the inherent capability of land to maintain or restore the ecological conditions to maintain a viable population of the Pacific fisher in the plan area. The Inyo National Forest has a number of ecosystem-level and species-specific plan

components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence.

Nelson Desert Bighorn Sheep

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of the Nelson desert bighorn sheep in the plan area. However, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Found in mid- to higher elevations (6,000 to 12,000 feet) in the White Mountains on the Inyo in areas with steep, rocky cliff or rock faces. Forages on shrubs located near or on these cliff faces and within meadow systems. Requires visually open areas with suitable escape terrain (rock cliff faces).

Table F-3 summarizes key threats, plan components, and expected effects on Nelson desert bighorn sheep.

Information on Current Distribution of the Species in the Planning Unit

There is an isolated population of Nelson desert bighorn sheep known to occur in the White Mountain area at elevations ranging from 6,000 to 12,000 feet, within the plan area. This is the most northern population of desert bighorn sheep in California. California Department of Fish and Wildlife has estimated this population to be about 300 sheep and the population appears stable. Most of these animals occur in the White Mountain Wilderness, with approximately 30 animals (or roughly 10 percent of the population) occurring outside this area in Silver Canyon.

Key Ecological Conditions in Plan Area

Habitat for Nelson desert bighorn sheep on the Inyo National Forest is in areas with steep, rocky cliff or rock faces. Shrubs located near or on these cliff faces and within meadow systems are important for foraging. Visually open areas with suitable escape terrain are key ecosystem characteristics. On the Inyo National Forest, these conditions occur in the alpine and subalpine assessment types, primarily within the White Mountains Wilderness which encompasses approximately 230,958 acres. The area is jointly administered by the Inyo National Forest (206,796 acres) and the Bureau of Land Management (about 24,162 acres). It is contiguous, with the Boundary Peak Wilderness along its northeast boundary.

Key Threats to Persistence

Threats to the persistence of all desert bighorn sheep in California include disease transmission from domestic sheep and goats, competition with livestock, loss of genetic diversity, habitat loss and disturbance (U.S. Fish and Wildlife Service 2011). The contact of bighorn sheep with domestic sheep or goats on adjacent private lands can transmit diseases to bighorn sheep and can cause die-offs of the affected bighorn sheep herds. Within the White Mountains, the primary local concern for the continued persistence of Nelson desert bighorn sheep is disease transmission from domestic goats that graze from Chalfant Valley through Hammil Valley, adjacent to the plan area (CDFW 2015). Epizootic pneumonia, caused by *Mycoplasma ovipneumoniae* (*M. ovi*), has been documented to occur in this herd and has caused respiratory disease and die-offs in bighorn sheep in the White Mountain herd (Besser et al. 2008, CDFW 2015). Possible intermingling between this herd and the Lone Mountain and Silver Peak Range Nelson desert bighorn sheep populations in Nevada during the breeding season pose additional risks, since both of these herds have also been documented to carry *M. ovi* (California Department of Fish and Wildlife 2015). To date, there has been one documented case of pneumonia on the Inyo National Forest, an 11-year-old male in 2016 (Nelson 2016).

Table F-3. Key threats, plan components and expected effects on Nelson desert bighorn sheep

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Respiratory disease (*Mycoplasma ovipneumoniae*) (verified in the White mountains since 2009) and disease transmission from domestic sheep and goats that stray onto the Inyo National Forest.	Not applicable	SPEC-SHP-DC 02 SPEC-SHP-STD 01 SPEC-FW-DC 02	Species specific plan desired conditions alleviate risk from disease transmission and population declines by limiting domestic sheep or goat grazing in areas of bighorn sheep use and ensuring species are minimally impacted from disease. A standard places restrictions on intermingling of goats and domestic sheep where disease risk assessment models predict a high likelihood of disease exposure.
Habitat suitability/loss from climate change	TERR-ALPN DC 01-03,05 DA-WILD-DC 02-03,05 RCA-MEAD-DC 01-07	SPEC-FW-DC 01-03 SPEC-FW-STD 01 SPEC-FW-GDL 04 SPEC-SHP-DC 01 TERR-FW-DC 05	Ecosystem level plan components promote habitat conditions in alpine ecosystems and wilderness areas that are resilient to climate change and support the role fire plays as a natural disturbance process. Species specific plan components include forestwide guidance for at-risk species that promotes resilient intact ecosystems, balances the needs of at-risk species with other resource uses and ecological processes, and mitigates risk to persistence from land management activities and other disturbance including recreational activities in wilderness that can negatively affect survival and recruitment. Species specific plan components further ensure sheep will have adequate habitat for movement, dispersal, feeding, and reproduction to maintain or increase population levels.
Inadequate or poor forage and habitat loss from conifer encroachment.	RCA-MEAD-DC 07 RCA-MEAD-OBJ 01	SPEC-SHP-DC-01	Ecosystem level plan components ensure meadow areas contain appropriate plant species for forage, that conifer encroachment is minimized, and identify specific and measurable objectives to move habitat toward the desired conditions. Species-specific desired conditions further reinforce these conditions specifically for bighorn sheep and specify adequate habitat with unforested openings and forage support persistent populations of sheep.

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Inadequate or poor forage (loss of winter range) from forest activities	WTR-FW-DC 04; RANG-FW-DC 01-03 RANG-FW-STD 01-05	N/A	Forestwide plan components for ensure nutritive forage is available for grazing in upland areas, that healthy wildlife populations are sustained and compatible with other resource values, and that livestock grazing needs are compatible with forage, browse and cover needs of wildlife.
Connectivity (loss of genetic diversity)	TERR-FW-DC 06	N/A	Forestwide plan component provides vegetation to support movement and connectivity of wide-ranging species which should promote genetic flow between populations.

The area in which bighorn sheep occur in the White Mountains is within California Department of Fish and Game Hunt Zone 7 and overlaps with four active cattle allotments. Lack of genetic diversity resulting from limited connectivity is another general concern; however, genetic diversity is not known to be a limiting factor for the White Mountains herd within the plan area.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed ecosystem-level plan components in Table F-3 above. However, the primary threat from the respiratory disease *Mycoplasma ovipneumoniae* is addressed at the species level.

Threats under Forest Service Control

Land management includes the following key threats:

- Competition with livestock for winter range
- Connectivity/habitat fragmentation (genetic isolation)
- Habitat loss, (conifer encroachment) loss of forage, and disturbance resulting from climate change

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections: Terrestrial Ecosystems and Vegetation (Alpine Zone); Watersheds; Wilderness; Riparian Conservation Areas (Meadows); Rangeland and Livestock Grazing

Competition from livestock and loss of winter range habitat is primarily addressed through plan components for Rangeland and Livestock Grazing (RANG-FW-DC 01-03; RANG-FW-STD 01-05). Desired conditions maintain ecosystems integrity on grazed lands and promote livestock needs that are balanced with available forage and wildlife needs. Habitat loss from climate change is addressed through desired conditions for Alpine and Subalpine systems (TERR-ALPN-DC 01-03, 05) that promote open areas and habitat that is resilient to climate change and related stressors. A desired condition (RCA -MEAD-DC 07) for meadows in upper montane areas limits conifer encroachment and promotes native understory plant composition and cover which should provide for foraging needs and animal movement.

In addition to these ecosystem-level plan components the species-specific desired condition SPEC-SHP-DC 01 also applies to Nelson desert bighorn sheep by ensuring key habitat needs including for foraging, bedding, birthing, and migration are provided for throughout the year. These species-specific plan components add greater emphasis and clarity to the existing ecosystem-level plan components.

Threats Not Under Forest Service Control

- Disease transmission from domestic sheep and goats that stray onto the Inyo National Forest.

There is controversy regarding the literature on disease transmission, as no articles have been published that document a visual observation in the field of nose-to-nose contact between domestic sheep and goats and bighorn sheep which resulted in transmission of this disease. However, studies conducted in research facilities (Foreyt 1989) and literature on the presence of bacteria, such as *M. ovi*, before and after domestic sheep or goats were observed in bighorn habitat (Besser et al. 2012) have shown a correlation between contact and the spread of disease. Further, Besser and others (2012) demonstrated exposure to a single *M. ovi* infected animal

resulted in transmission of infection and bronchopneumonia to all bighorn sheep both within the same pen and in adjacent pens located 7.6 to 12 meters apart.

The Inyo National Forest does not currently have active allotments with domestic goats and sheep overlapping with sheep habitat. However, stray animals that may wander onto national forest land still pose a threat and it was necessary to add species-specific plan components (SPEC-SHP-DC 02 and SPEC-SHP-STD 01) to minimize the spread of disease from domestic sheep and goats within Forest Service authority.

Finally, the following goal encourages an all-lands approach for mitigating the threats and stressors that affect the ecological conditions that would support Nelson desert bighorn sheep and help maintain viability throughout its range:

- SPEC-SHP-GOAL 01: Coordinate with the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service to conduct a risk assessment of pack goat use on the Inyo National Forest and develop mitigations strategies to manage the risk of disease transmission, if needed.

Summary

The most immediate and primary risk to Nelson Desert Bighorn Sheep persistence on the Inyo National Forest is exposure to disease. The Inyo National Forest limits this threat by restricting goat and sheep use in areas of the White Mountains that overlap with bighorn sheep occupation within Forest Service management authority, but we have limited ability to mitigate co-mingling with diseased animals such as stray domestic sheep and goats from private properties or animals from other bighorn herds in adjacent areas. Future habitat loss due to warming temperatures and climate change, as well as forage competition with livestock are possible risk factors, as is loss of genetic diversity resulting from habitat fragmentation. The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of Nelson desert bighorn sheep within its range. However, the primary risk factor, disease exposure from privately owned livestock that stray onto the Inyo National Forest is beyond Forest Service management authority and for this reason a reduction in viable populations of bighorn sheep can occur because of land use outside National Forest System lands.

Sierra Marten

Determination: It is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Sierra marten in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Mature coniferous forest, typically more mesic than xeric, with supporting features such as large-diameter trees and snags, multi-layered canopies, large down wood, moderate to high canopy closure (more than 30 percent) and structurally diverse and complex understory that is interspersed with riparian areas and meadows. Core patch size and spatial connectivity of patches is also important.

Table F-4 summarizes key threats, plan components, and expected effects on Sierra marten.

Table F-4. Key threats, plan components and expected effects on Sierra Marten

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of habitat, loss of connectivity/movement corridors due to management activities such as fuels reduction treatments, timber harvest and recreation use.	TERR-FW-OBJ 01-02 TERR-FW-GDL 01-02 TERR-FW-STD 01 TERR-OLD-GDL 01-02 TIMB-FW-DC 01-03 TIMB-FW-GDL 02-03 DA-WILD-DC 02-03, 05-08 MA-RCA-GDL 01-04 RCA-MEAD-OBJ 01 REC-FW-DC 04,08 REC-FW-GLD 01-03 DA-MBGU-DC 02 INFR-FW-DC 03 MA-GRA-GDL 01 FIRE-FW-GDL 01-02 FIRE-FW-STD 02	SPEC-SMPF-DC 01-03 SPEC-SMPF-GDL 01-02 SPEC-FW-DC 01-03 SPEC-FW-STD 01 SPEC-FW-GDL 01, 04	Forest wide ecosystem plan components for Terrestrial Ecosystems, Old Growth, Timber and Animals and Plants provide direction for maintaining habitat in areas where management activities take place by emphasizing heterogeneity, connectivity, and retention of key structural elements including old growth components, snags and trees. A standard for forestwide terrestrial habitat ensures the retention of conifer trees greater than 30 inches in diameter while guidelines ensure fuel reduction treatments minimize mortality of large, old trees and snags and incorporate design features that reduce fire intensity and promote delayed mortality. Objectives provide specific and measureable strategies to move forest composition and structure toward desired conditions, and return natural fire regimes to the landscape further reducing loss of habitat and promoting ecosystem resilience. These restoration based objectives will help keep up with the pace and scale needed to maintain ecological integrity and resist key stressors over time. Desired conditions and guidelines for Wilderness and Riparian Conservation Areas mitigate threats from recreation, fire and livestock and ensure watersheds are functioning properly and that impacts to at-risk species are minimized. Forest wide guidelines for Sustainable Recreation minimize the addition of recreational facilities in at-risk species habitat and ensure at-risk species needs will be integrated into project design in recreation settings. Species specific guidelines for marten reinforce ecosystem-level plan components and specifically ensure core habitat will be retained during site specific projects; that cover is adequate for marten prey species, that heterogeneous understory habitat provides denning sites and that project design does not lead to unnatural increases in marten predation rates that could subsequently lead to population declines. Forest wide standards and guidelines for Animals and Plants promote design features and mitigations that consider needs of all at-risk species during project implementation.

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of quality habitat due to climate change or other stochastic events (e.g. wildfire, reductions in snowpack) that lead to losses of mature forest conditions, and or meadow riparian habitat.	WTR-FW-DC 01 TERR-FW-DC 01-06,08-09 TERR-MONT-DC 01-02 TERR-OLD-DC 01-07 TERR-ALPN-DC 01-03 & 05 MA-RCA-DC 01, 05,08-09 RCA-MEAD-DC 01-07 FIRE-FW-DC 01	SPEC-SMPF-DC 01-03 MA-RCA-DC 02	Ecosystem level plan components that include desired conditions for Watersheds, Terrestrial Ecosystems, Old growth, Montane and Alpine zones and Riparian areas help to ensure martens have adequate habitat for movement, dispersal, feeding, and reproduction at multiple scales that may otherwise be lost due to climate change and other stochastic events such as high severity fire and insect outbreaks. Species specific plan components for marten provide desired conditions that marten core habitat areas are intact and well distributed. Desired conditions for riparian conservation areas support persistence of species of conservation.
Loss of resting/denning habitat	TERR-JEFF-DC 04-06	Not applicable	Plan component ensures species will have structures for resting and raising young.
Loss of habitat connectivity/corridors (genetic diversity).	MA-CBRA-DC 02 TERR-FW-DC 06	Not applicable	Management Area direction for backroad recreation promotes desired conditions that promote species diversity and movement corridors and large wild tracts of land in undeveloped landscapes while forest wide direction for terrestrial ecosystems ensures the landscape contains a mosaic of vegetation types and structures that provide habitat, movement and connectivity for a variety of species including those that are wide-ranging and that use old growth.
Loss of complex early seral habitat.	TERR-CES-DC 01-03 TERR-CES-GDL 01-03,05	Not applicable	Desired conditions ensure complex early seral habitats are distributed across the landscape and key habitat elements such as large diameter snags are available for resting habitat. Guidelines ensure restoration projects maintain ecosystem integrity, important wildlife habitat, and that large fires in potential marten habitat minimize harvest to provide areas of complex early seral habitat for species that need them.

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of key habitat features such as large diameter trees and snags, multi-layered canopies, large down wood, moderate to high canopy closure and structurally diverse forest in the red fir, lodgepole pine and mixed conifer ecosystems	TERR-RFIR-DC 01-07 TERR-LDGP-DC 01-10 TERR-DMC-DC 01-06 TERR-JEFF-DC 01-03, 07	Not applicable	Ecosystem level plan components provide for key structural features such as snags and logs needed for resting and denning. Also provide heterogeneity and complex forest structure, and various seral/structural stages needed to complete different life cycle needs. Fire is maintained as a natural process on the landscape and promotes ecosystem resilience.
Insecticide and pesticide use from illegal Marijuana growing sites that contaminate prey species and associated forage.	Already covered under existing law. Not within forest service management authority.	N/A	

Information on Current Distribution of the Species in the Planning Unit

In the plan area, marten locations have been observed in wilderness, almost exclusively west of Highway 395, with only one occurrence east of the highway in the Jeffery pine forest. There are 12 records for marten in the NRIS database, located predominantly on the western side of the forest near Mammoth Lakes (Mammoth and Mono Lake RDs) and on the Kern Plateau adjacent to the Sierra National Forest (White Mountain RD). There has been at least one documented denning site where two young were captured and telemetered, (Inyo National Forest unpublished data); however, the current level of abundance/specific population information for this species on the Inyo National Forest is unknown. The Forest does have many years of vegetation survey data (Kucera 1996) and incidental observations show that suitable habitat is available and breeding is presumed, however it is currently uncertain if a viable population does in fact exist. Martens frequently change den locations and surveys for dens are intensive, making it difficult to estimate levels of abundance. Martens may move back and forth between the Inyo National Forest and neighboring Sequoia and Sierra National Forests as well as Yosemite National Park.

Key Ecological Conditions in Plan Area

Mature coniferous forest, typically more mesic than xeric, with supporting features such as large diameter trees and snags, multi-layered canopies, large down wood, moderate to high canopy closure (>30%), structurally diverse and complex understory that is interspersed with riparian areas and meadows for foraging and movement. Core patch size and spatial connectivity of patches are also critical. On the Inyo National Forest, these conditions can be found in the mixed conifer and upper montane forest ecological zone which includes subalpine conifer forest, red fir, lodgepole pine, and mixed conifer forest.

Key Threats to Persistence

Threats to persistence include activities such as fuel reduction, vegetation management treatments, and to a lesser extent, recreation and climate change that negatively affect or remove mature forest and or key structural elements such as large live and dead trees (large-diameter snags), logs, and coarse woody debris or cause losses in connectivity or movement corridors. Key structural elements are important for resting and predator avoidance, as well as for denning and raising young.

Higher fuel loading, and changes in forest structure and composition associated with fire suppression coupled with a changing climate and related increases in drought and insect outbreaks can also cause significant changes in forest structure, function and composition (Meyer 2013).

Threats Under Forest Service Control

Land management includes the following key threats:

- Habitat loss (especially loss of denning, resting and foraging habitat, large old trees and dense canopy cover) and disturbance from activities such as vegetation management, timber removal, wildfire, fuels treatment, and recreation.
- Connectivity and habitat fragmentation, loss of movement corridors and loss of genetic diversity due to isolation.
- Habitat loss resulting from climate change and natural disturbances such as wildfire.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and Table F-4 above.

- Terrestrial Ecosystems and Vegetation (Subalpine, Alpine and Montane Zones, Complex Early Seral, Red Fir, Jeffrey Pine, Lodgepole Pine, and Mixed Conifer)
- Watersheds
- Wilderness
- Riparian Conservation Areas (Meadows)
- Management Areas (Challenging Backroad, Riparian Conservation)
- Sustainable Recreation

Most of the threats for Sierra marten can be addressed through ecosystem-level plan components that emphasize resilient, connected forests containing the complex structural attributes martens need for survival and reproduction. However, species-specific plan components have been added in a few instances for greater clarity and emphasis. Loss of old growth habitat and key structural attributes for denning and nesting are key threats and desired conditions for Sierra Marten (SPEC-SMPF-DC 01-03) minimize the risk from high-severity fire in marten habitat core areas, ensure overarching desired conditions from terrestrial and riparian vegetation are met and that marten habitat is well distributed throughout the landscape providing for foraging, denning and resting habitat and movement across large landscapes. Three guidelines (SPEC-SMPF-GDL 01-02; SPEC-FW-GDL 01) specify projects are designed in a way to minimize predation, and provide hiding cover and denning habitat and retention of complex forest structure in marten core habitat areas.

Threats Not Under Forest Service Control

- Poisoning of animals form pesticide/insecticide used by marijuana growers
- Large connected landscapes that expand beyond the boundary of the Inyo National Forest

Illegal rodenticide poisons to protect marijuana plantations is a growing area of concern throughout the Sierra Nevada and poses a threat to numerous mammals, including martens (Gabriel et al. 2012). The impact presents a detrimental effect to population health, survival and status. Marijuana growing activity is extensive, illegal, and not authorized, funded, or carried out by the Forest Service.

Sierra marten is a wide-ranging species and large connected landscapes are critical to long-term viability. The ecosystem-level and species-specific plan components are designed to move existing habitat conditions for marten toward a more ecological resilient state than what currently exists. However, ultimate long-term persistence and viability of this species will depend on management actions (or inactions) on adjacent landscapes. Two goals (SPEC-FW-GOAL 01 and 03) encourage cooperative protection and restoration of habitat across ownerships boundaries which should benefit marten throughout its range.

Summary

The fragmented nature of upper montane forests on the Inyo National Forest, coupled with declining and or small population numbers of marten, and reduced snowpack resulting from climate change, may put the species at future risk. This may be of particular concern with regard to range contraction given the Inyo National Forest's location at the edge of the species

southeastern most range. Further, loss of larger trees and heterogeneity in pine forests, increased risk to upper montane forest from uncharacteristic stand-replacing fire, and insect outbreaks and warming temperatures with reduction of snowpack creates substantial concern about this species ability to persist on the planning unit. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of Sierra marten within its range. However, limited occurrence data for marten on the Inyo National Forest, coupled with its wide ranging-ranging nature suggest it is not within the inherent capability of land to maintain or restore the ecological conditions to maintain a viable population of the Sierra marten in the plan area. The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence.

Bald Eagle[9]

Determination: It is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the bald eagle in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Large bodies of water (lakes or reservoirs) or free flowing large rivers with adjacent large live trees or snags.

Table F-5 summarizes key threats, plan components, and expected effects on bald eagle.

Information on Current Distribution of the Species in the Planning Unit

Bald eagles have long been known to occur on the Inyo National Forest during winter months, with three nests observed on the national forest since 2004 in the Upper Owens River and June Lake areas. The nest location in the Upper Owens River area may have subsequently been abandoned; only one adult bird has been observed in recent times and nesting activity has presumably stopped in that area. Another potential nest site may be present in the Hilton Lakes area where juvenile and adult bald eagles have been observed. There is limited information on the bald eagle population numbers on the Inyo National Forest. Although nesting bald eagles have been observed and winter bald eagle surveys document wintering habitat use on the forest (Eakle et al. 2015), there is little information on actual population trends or density. Individuals have been observed, but there is uncertainty as to whether a viable population currently exists on the Inyo National Forest.

[9] Also see Bald and Golden Eagle Protection Act of 1940

Table F-5. Key threats, plan components and expected effects on bald eagle

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss: changes in timing and flow of water and water availability resulting from climate change, forest management activities, and or hydroelectric power.	WTR-FW-DC 01-04, 06-07 WTR-FW-STD 01-03 DA-WILD-DC 02-03 WTR-FW-OBJ 01	SPEC-FW-GDL 05 SPEC-FW-STD 01	Ecosystem level plan components provide for ecological integrity of aquatic systems so that they are high quality and resilient to climate change and other demands, and provide adequate prey for bald eagles. Species specific guideline for at-risk species minimizes risk of dewatering aquatic/riparian habitat from water developments and a forest wide standard promotes design features to protect all species at-risk during project implementation.
Habitat loss: stream and riverine ecosystems, riparian habitat, ponds and pools	RCA-RIV-DC 01-06 RCA-RIV-OBJ 01-02 RCA-LPP-DC 01 MA-RCA-DC 02-05,08-11 MA-RCA-OBJ 01 MA-RCA-STD 01-06	N/A	Ecosystem level desired conditions and objectives provide for ecological integrity of aquatic systems so that they are resilient to climate change and other demands and can provide the foraging habitat and prey species necessary for bald eagles.
Human Recreation and related disturbance.	WTR-FW-DC 05 MA-RCA-DC 10 DA-MBGU-DC 02 MA-GRA-GDL 01 REC-FW-GDL 01-03 REC-FW-DC-04,08 SPEC-FW-DC 05 DA-WILD-DC 05,08 DA-WILD-REC1-DC 02-05 DA-WILD-REC2-DC (02-05) DA-WILD-REC3-DC (02-05)	N/A	Ecosystem level desired conditions minimize disturbance from recreation related activities and human activities on sensitive resources. Guidelines constrain impacts on resources including at-risk species breeding habitat in recreation areas and ensure the needs of at-risk species will be accounted for during project design.

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of roosting and nesting trees.	TERR-FW-DC 05-06 TERR-FW-STD 01 TERR-FW-GDL 01-02 TERR-OLD-DC 03--06 TERR-OLD-GDL 01-02 TERR-DMC-DC 01--06 TERR-JEFF-DC 04-06 TIMB-FW-DC 01-03 TIMB-FW-GDL 02-03 TERR-MONT-DC 01-02	SPEC-FW-GDL 01	Ecosystem level plan components ensure that large trees and snags necessary for nesting and roosting and perching will be retained during project implementation and that large trees and snags are resilient to natural disturbance such as fire, insects and disease. Plan components also help to ensure that a supply of trees in the larger size classes is distributed across the forest at levels that will provide sustainable nest/roost habitat for bald eagles cross the landscape. A species-specific guideline further reinforces the retention of known nest and roost trees used by species of conservation concern or raptors.

Key Ecological Conditions in Plan Area

Bald eagles use large conifer stands (Jeffery pine and mixed conifer) where there is access to open water (for example, lakes or reservoirs) or free flowing rivers for foraging, typically within 1 mile of large trees (about 40 inches diameter) and greater than 98 feet tall, snags, or dead top trees. In northern California, nest territories are typically within conifer stands with most nests in ponderosa pine (*Pinus ponderosa*), Jeffrey pine (*Pinus jeffreyi*) and sugar pine (*Pinus lambertiana*). Nests are generally within one of the tallest trees in the stand, and the majority of nest trees have an unobstructed view to a water body (Lehman 1979). In California, large-diameter trees are used for nesting, with an average of 109 centimeters (43 inches) in diameter (Anthony et al. 1982).

Approximately 479 lakes occur on the Inyo National Forest, totaling about 46,000 acres. Many of the high-elevation lakes support introduced trout species of brook, brown, rainbow and golden trout. There are no lakes in the White, Inyo or Glass mountains. Waterbodies less than 2 acres are considered ponds, of which there are 1,372 on the Inyo National Forest, comprising a total of 662 acres. There are 26 lakes and meadows scattered throughout the lower elevations of the eastern Sierra Nevada foothills. These waterbodies have been enhanced by dams to increase the water holding capacity. Large river systems that provide a consistent, abundant flow of water throughout the year, as well as fish species diversity include the upper Owens River through Long Valley, the South Fork Kern River and the San Joaquin River through Reds Meadow.

The amount of potential nesting habitat on the forest for bald eagles is somewhat limited; however, because there are relatively few forested areas near large bodies of water that offer a suitable prey base.

Key Threats to Persistence

The largest current threat to remaining colonies may be disturbance from recreational activities, such as boating, jet-skiing, fishing and low-flying aircraft, which can cause disturbances to nesting birds (Buehler 2000). Camping within 100 meters of a bald eagle nest can lower the amount of prey consumed (-26 percent) and prey fed to nestlings (-29 percent) relative to activity observed when camping is restricted to at least 500 meters from nests (Steidl and Anthony 2000). Loss of key habitat components such as perches and roosting trees, from natural disturbance events associated with higher fuel loading and changes in forest structure and composition are additional threats likely to be exacerbated by climate change. Fishing opportunities and recreation uses are expected to continue and impacts from those activities will continue to occur. The California Department of Wildlife is expected to continue the fish stocking program in many of the lakes.

Threats Under Forest Service Control

Land management includes the following key threats:

- Recreation and human disturbance
- Habitat loss and loss of key components such as perches and roosting trees

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and Table F-5 above.

- Riparian Conservation Areas (Rivers, lake and ponds)
- Terrestrial Ecosystems and Vegetation (Old growth, Mixed conifer, and Jeffrey pine)
- Watersheds
- Timber

- Recreation
- Management Areas (riparian conservation area, general recreation)

Most of the threats for bald eagle on the Inyo National Forest can be addressed in the form of desired conditions that emphasize sustainable recreation and that minimize human disturbance. Desired conditions, standards, and guidelines for Riparian Conservation Areas, Terrestrial Ecosystems, Timber and Watersheds minimize habitat loss and emphasize the retention of large trees and snags that provide nest sites and suitable foraging perches for hunting. The following plan components when carried out would protect bald eagle from the key threat of recreation related disturbance:

- A guideline for general recreation areas (MA-GRA-GDL 01) emphasizes direct management techniques to reduce impacts on resources.
- Forestwide desired conditions for recreation (REC-FW-DC 04, 08) minimize impacts and adverse effects on sensitive and natural resources while recreation guidelines (REC-FW-GDL 01-03) minimize construction of recreation facilities in at-risk species habitat and ensure the needs of at-risk species are incorporated into project design.
- In the Ansel Adams and John Muir Wilderness, desired conditions for recreation (DA-WILD-REC1-DC 02-05; DA-WILD-REC2-DC 02-05; DA-WILD-REC3-DC 02-05) seek to minimize impacts from camping with emphasis on riparian, lakeshore and stream channel conditions.
- A forestwide desired condition for all species (SPEC-FW-DC-05) minimizes risk from hunting and fishing that could negatively affect native species including bald eagle.
- A recreation goal (REC-FW-GOAL 06) supports collaborative partnership opportunities to enhance responsible recreation and increase knowledge of related socioeconomic and environmental issues.

In addition to the ecosystem-level components mentioned above, several species-specific plan guidelines (SPEC-FW-GDL-01 and TERR-FW-GDL-02) were added to further emphasize that the retention of key habitat components such as roosting and nesting trees for raptors are considered during project implementation. A forestwide standard SPEC-FW-STD-01 places additional emphasis on the protection of at-risk species habitat by ensuring appropriate design features, mitigation, and project timing considerations are incorporated into projects that may affect their habitat.

Threats Not Under Forest Service Control

- Water development and diversions as well as drought effects from climate change which alter hydrologic regime and affect aquatic habitat and associated species.

Water diversions and water developments can have negative effects on downstream communities by altering habitat function, composition and structure and diminishing ecological integrity. Reservoirs will continue to exist under current management and jurisdiction to fulfill their water storage and hydroelectric needs. No change in management is expected to occur within the next 20 years for reservoirs, but climate change has the potential to exert additional stress on water delivery systems. Ecosystem level plan components for Watersheds (WTR-FW-DC 01-04, 07 and WTR-FW-STD 01-03) provide for healthy riparian and aquatic ecosystems within management authority, but because of growing population demands and off-forest consumption of water resources, these habitats may not realize their full recovery potential, limiting the Inyo National Forest's ability to provide for species viability. However, several goals provide a vision for working across land boundaries to collectively attain desired conditions. A watershed goal (WTR-FW-GOAL 01) encourages collaborative work between adjacent land owners and agencies to

improve watersheds across ownership boundaries while a goal for riparian conservation areas (MA-RCA-GOAL 01) promotes coordination with the State fish and wildlife agencies to address native aquatic species issues, including evaluating management and monitoring needs to address aquatic species requirements across ownership boundaries.

Summary

Bald eagles are currently known to use the Inyo National Forest for wintering with only a couple of nests since 2004. It is not currently known if the national forest habitat maintains a viable population of bald eagle. Habitat loss resulting from high-intensity fires and loss of riparian habitat continues to be a potential threat. Disturbance from recreationists is perhaps the biggest immediate risk factor affecting bald eagles on the Inyo National Forest. It is anticipated this will continue to be a potential risk factor for this species, as human population levels and recreation activity are expected to increase over time. The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of bald eagle within its range. However, due to uncertainty about the species current viability, and potential future threats associated with recreation and climate change, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of bald eagle within the plan area.

Bi-State Greater Sage-Grouse Population

Determination: The ecosystem plan components may not provide the ecological conditions necessary to maintain a viable population of the bi-state greater sage-grouse population in the plan area. Therefore, additional species-specific plan components have been provided. The combination of ecosystem and species-specific plan components should provide the ecological conditions necessary to maintain a viable population of the bi-state greater sage-grouse population in the plan area.

General Key Ecological Conditions: Large and contiguous sagebrush stands mixed with areas of wet meadows, riparian, or irrigated agriculture fields.

Table F-6 summarizes key threats, plan components, and expected effects on bi-state greater sage-grouse.

Information on Current Distribution of the Species in the Planning Unit

Bi-State sage-grouse occur on the Inyo National Forest within designated population management units (PMUs) which are areas delineated around the subpopulation of bi-state sage-grouse. Part or all of the following population management units are contained and designated within the Inyo National Forest as Bodie, South Mono, and White Mountains. While current population estimates for sage-grouse on the Inyo specifically are unknown, three leks are known to occur on Inyo National Forest. Telemetry work conducted from March to May of 2017 identified a total of 42 nests across the Bodie Hills, Long Valley, and Parker Meadows study areas which occur on or near the Inyo National Forest (See Figure 1 in USGS 2017).

The following general population trends have been observed on population management units that include the Inyo National Forest: Bodie population management unit, increasing since 1995; and Long Valley, stable to increasing. In 2016, a mark-recapture study of eight individuals was initiated to assess population trends for the White Mountain Population Management Unit.

Table F-6. Key threats, plan components and expected effects on bi-state greater sage-grouse population

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss: Pinyon-juniper expansion and conifer encroachment into sagebrush habitats, invasive species, and predation by ravens.	TERR-SAGE-DC 01-05 INV-FW-DC 01-02 INV-FW-OBJ 01-02	SPEC-SG-DC 01-09	Plan Components ensure the appropriate habitat components necessary for lekking, nesting, and denning are available and resilient to threats from invading tree and nonnative species and or fire and disturbance events, including climate change. Specific and measurable objectives focus on elimination of high priority invasive plants. Species-specific desired conditions 05-06 minimize competition from nonnative plant species that outcompete native species and provide cover and protection from predators.
Habitat loss: Pinyon-juniper expansion and conifer encroachment into sagebrush habitats, invasive species.	TERR-SAGE-GOAL 01 (b-g) TERR-FW-OBJ 01-02	SPEC-SG-STD 01-03 SPEC-SG-GDL 03-04 SPEC-SG-OBJ 01 SPEC-FW-GDL 04	Ecosystem level plan components incorporate restoration measures that enhance sagebrush communities that have experienced large landscape scale disruptions in composition, structure and function from invading conifers and juniper. Species specific plan components ensure habitat restoration projects will limit expansion of invasive species like cheatgrass, as well as undesirable pine species while promoting the native plant community, ecologic and hydrologic integrity and improving breeding and brood rearing habitat. A specific and measurable objective ensures movement toward the desired conditions for sage grouse priority habitat within 10 years of plan approval. A forestwide guideline includes direction to incorporate approved conservation strategy direction as appropriate during site specific projects.

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Nest failure and viability; protection from predators (e.g. ravens) and weather.	LAND-FW-GDL 02	SPEC-SG-DC 01-03 SPEC-SG-STD 02, 06-07, 10 SPEC-SG-GDL 03 SPEC-FW-GDL 01	Species specific desired conditions promote well distributed habitat for breeding, brood rearing and dispersal. Standards provides mitigation measures to minimize nest losses, predation, and disturbance to breeding sites during project implementation and ensure tall structures are absent near suitable lek habitat or are retro-fitted with perch deterring devices. Standards also establish limited operated periods during the sage-grouse breeding and nesting season to minimize disturbance and nest failure. Species specific guidelines ensure nest trees that provide cover and protection from predators are protected during project implementation and that power lines do not provide perching sites for avian predators.
Habitat loss: Wildfire	FIRE-FW-DC 01 MA-RCA-GDL 04 TERR-SAGE-DC 02, 04	SPEC-SG-DC 07 SPEC-SG-STD 15	Ecosystem plan level components minimize habitat loss and promote native vegetation restoration where fire is a threat to meadow riparian and sagebrush habitat. Species specific desired conditions for sage grouse minimize habitat loss from uncharacteristic fire and ensure sage brush stands will be protected during wildfires.
Habitat loss: Livestock grazing	TERR-SAGE-DC 02 RANG-FW-DC 01-03 RANG-FW-STD 03-04 RANG-FW-GDL 01 MA-RCA-GDL 03	SPEC-SG-STD-08,11	Plan Components minimize loss of forage, cover and habitat for lekking and nesting and ensure meadow habitat in active livestock allotments is compatible with sage-grouse habitat needs and trending toward desired conditions. Species specific standards establish key meadow or upland areas for sage-grouse in active allotments and ensure fencing is not a barrier to movement near known leks.

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss: riparian/meadow habitat and hydrologic function.	RCA-MEAD-DC 01-07 RCA-MEAD-OBJ 01 RCA-RIV-DC 03-04 RCA-SPR-DC 01-03 MA-RCA-DC 01 02 MA-RCA-STD 10-12,17 MA-RCA-GDL 01, 03-04 WTR-FW-DC 04	SPEC-SG-DC 09	Ecosystem level plan components for meadows, rivers and streams and riparian conservation areas promote ecosystems that are resilient to disturbance and hydrologically functional. Meadows contain a diversity of grasses and forbs with complex habitat for native plant and animal communities. A desired condition for watersheds ensures nutritive forage is available for grazing and that healthy populations are sustained in upland and riparian communities. Standards constrain livestock grazing activities that impair riparian conservation areas, meadows, and fens and guidelines minimize disruption of hydrologic connectivity of streams, meadows, and wetlands. An objective promotes enhanced meadow conditions. Species specific desired conditions promote healthy riparian and meadow areas necessary for late season brood rearing, promotes hydrologic/ecological integrity and species composition needed for brood rearing habitat.
General population loss/collapse and habitat loss for species at risk	N/A	SPEC-FW-DC 01-03 SPEC-SG-OBJ 01	Species specific plan components ensure that management activities promote ecological conditions that support the habitat components necessary to sustain healthy, functioning population levels within the inherent capability of the landscape. An objective specifies that within 10 years of the plan approval, up to 14,900 acres of sage-grouse habitat, within and between population management units, will be improved or restored to meet sage-grouse priority habitat desired conditions.
Habitat loss: loss of connectivity and disturbance from forest management activities.	TERR-SAGE-DC-04	SPEC-SG-GDL 01-04 SPEC-SG-STD 04-15 SPEC-FW-GDL 01, 04, 05 SPEC-FW-STD 1	Ecosystem level plan components ensure sage brush system are resilient to fire and invasive species and that fire burns within in its natural range to limit encroaching conifers. Habitat provides connectivity for sage-brush dependent species. Species specific plan components help to ensure that site specific projects incorporate mitigation measures and conservation strategies during project implementation to enhance restoration, and reduce project related disturbance and habitat fragmentation that can negatively affect dispersal, breeding and foraging.

Key Ecological Conditions in Plan Area

Greater sage-grouse in California are dependent on sagebrush habitats that include a diversity of sagebrush mixed with native forbs and grasses (Schroeder et al. 1999, Hall et al. 2008). Lekking, nesting, molting, and wintering all require different configurations of sagebrush habitat, which increases the species' vulnerability (Hall et al. 2008). On the Inyo National Forest, the ecological conditions for greater sage grouse occur in the sagebrush shrub assessment type, which occupies approximately 300,000 acres on the Inyo. This acreage does not include those areas currently occupied by pinyon-juniper that could potentially be a sagebrush shrub type. The sagebrush shrub assessment type includes all subspecies of big sagebrush (*Artemisia tridentata*), as well as the other woody sagebrush species found on the national forest, and shrub communities where sagebrush is dominant but other species co-occur (such as low sagebrush, sagebrush-bitterbrush, black sagebrush, and silver sagebrush). Sagebrush shrub communities occur from the floor of the Owens Valley on Los Angeles Department of Water Power lands, in disjointed bands all the way up to and including subalpine areas in the Sierra Nevada, and the White, Inyo, and Glass Mountains. Research natural areas that include the sagebrush shrub assessment type include White Mountain, McAfee Meadow, and Indiana Summit, with some small areas of the sagebrush shrub vegetation type within the Whippoorwill Flat and Sentinel Meadow Research Natural Areas. Approximately 30 percent (89,894 acres) of the sagebrush assessment type on the Inyo National Forest is located within designated wilderness. The Inyo National Forest manages approximately 213,670 acres (20 percent) of a total of 1,075,730 acres of priority habitat for the sage-grouse. Primary management units include Bodie, South Mono and White Mountains.

Key Threats to Persistence

Because sage-grouse are sagebrush obligates, they are threatened by actions and processes that reduce the extent and integrity of this habitat (Hall et al. 2008) and warrant area specific habitat guidelines (Stringham and Snyder 2017). Western juniper expansion is a major threat to sage-grouse occupation in northeastern California and to a lesser extent in Mono and Inyo Counties. Encroaching juniper displaces sagebrush and other shrubs (Crawford et al. 2004). Juniper also provides additional perches for aerial predators and cover for terrestrial predators. Predation by ravens has the potential to negatively affect sage-grouse and there are some areas documented on the Inyo that have low understory and shrub cover, which could leave nests exposed. However, these areas are within the natural range of variation for the Inyo National Forest. Sage-grouse avoid areas with abundant juniper (SGCT 2004, Hall et al. 2008). Jeffery pine and pinyon/juniper expansion is occurring in the sagebrush shrub assessment type on the Inyo National Forest, possibly the result of fire suppression, livestock grazing and changing climate. Pinyon-juniper expansion has been observed throughout the bi-state area (Bi-State Action Plan 2012) and an estimated 25,261 acres of sagebrush shrublands are undergoing active encroachment by pinyon and juniper trees on the Inyo National Forest, as determined from aerial photography interpretation.

Both prescribed fires and wildfires have the capacity to degrade sage-grouse habitat significantly. Sagebrush is typically slow to reestablish following fire, has poor seed dispersal, and has little ability to naturally reestablish in sites dominated by annual grassland (Shaw et al. 2005). Fire also facilitates the invasion of cheatgrass, which commonly occupies sites following disturbance, especially burning (Connelly et al. 2000). Frequent (less than 20- to 30-year interval) or late-summer burning favors cheatgrass invasion and may be a major cause of cheatgrass expansion in sagebrush habitats. The Inyo has experienced recent wildfires within sagebrush ecosystems that have led to some cheatgrass expansion. However, these wildfires have not led to complete type conversions or reduced the suitability of these areas for sage-grouse.

Although livestock grazing is not identified as a key threat in the Bi-State Action Plan (2012), it can cause disturbance and trampling of nest sites. There are 49 cattle and horse and sheep and goat allotments identified on the Inyo National Forest. Of these, 30 occur within priority sage-grouse habitat, with 20 of those being active. Reissuance of grazing permits since 2009 includes design features to reduce impacts to sage-grouse.

Threats Under Forest Service Control

Land management can be summarized into the following key threats:

- Habitat loss (meadows) and fragmentation resulting from encroachment of juniper and nonnative invasive weeds such as cheatgrass.
- Habitat loss resulting from wildfire and interrelated effects of cheatgrass invasion (i.e. disruption of natural fire regime).
- Livestock grazing
- Infrastructure which can result in additional habitat fragmentation and or increases in predation by providing suitable perches for predators.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section threats are primarily addressed through plan components under the following sections and are described in Table F-6 above. However, the primary threat resulting from loss of high quality habitat for nesting and brood rearing habitat resulting from pinyon juniper invasions and wildfire is more adequately addressed at the species level.

- Terrestrial Ecosystems and Vegetation (Sagebrush)
- Invasive Species
- Watersheds
- Riparian Conservation Areas (Meadows, rivers, streams and springs)
- Management Areas (Riparian Conservation Areas)
- Rangeland and Livestock Grazing
- Fire
- Lands

While ecosystem plan components for the assessment types and program areas include direction that would address the primary threats to sage-grouse habitat in many cases, species-specific plan components were added to more specifically address threats relative to the loss of high-quality habitat for nesting and brood rearing resulting from pinyon/juniper invasions and wildfire. Desired conditions for sage-grouse (SPEC-SG-DC 01-09) provide high-quality habitat for these critical nesting and brood rearing needs by minimizing overstory trees, limiting cheatgrass (which out-competes native grasses with higher dietary value and alters natural fire regimes), and specify brood rearing habitat conditions in the Bodie, South Mono and White Mountains Population Management Units. An objective (SPEC-SG-OBJ 01) critical to meeting these desired conditions specifies within 10 years of the plan approval, up to 14,900 acres of sage-grouse habitat, within and between population management units, will be improved or restored to meet sage-grouse priority habitat desired conditions. Standards (SPEC-SG-STD 01-15) place constraints on operating periods specifically within sage grouse habitat during breeding and nesting season, ensure additional structures will not occur near lekking habitat, ensure fences will not provide barriers to movement, and livestock feeding stations are avoided near sage-grouse leks. Guidelines (SPEC-SG-GDL 01-04) work to improve connectivity specifically between sage-

grouse habitats and minimize threats from utility lines. These plan components collectively work to move sage-grouse habitat toward desired conditions that should provide optimal breeding and nesting habitat in the future, and minimize predation, disturbance, and fragmentation from forest management activities as well as wildfire and cheatgrass invasion.

Threats Not Under Forest Service Control

Cheatgrass invasion, conifer encroachment into sagebrush habitats, and predation from utilities infrastructure.

Summary

The greater sage-grouse, bi-state population is a sagebrush obligate with highly specific habitat needs. Juniper expansion, fire, and invasive species are primary threats to habitat integrity and long-term persistence of this species in the plan area. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of greater-sage grouse, bi-state population within the plan area.

California Spotted Owl

Determination: It is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the California Spotted Owl in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Forests containing old growth characteristics (dense vegetation and canopy cover, snags, cavities, larger trees and large down woody debris) in coniferous and mixed pine-oak forests. On the Inyo National Forest, these ecological conditions can be found in the mixed conifer and upper montane forest ecological zone which consists of red fir, and Jeffrey and lodgepole pine.

Table F-7 summarizes key threats, plan components, and expected effects on California spotted owl.

Information on Current Distribution of the Species in the Planning Unit

There are currently no records in ebird, CNDDB, or BISON for California spotted owl (CSO) on the Inyo National Forest. However, forest level surveys have detected owls on the west side bordering the Sequoia National Forest, in wilderness and at the farthest south end of Inyo National Forest. In the past, this area of the Inyo National Forest was managed by the Sequoia National Forest, hence it was considered that there were no spotted owls on the Inyo National Forest. According to the CDFW spotted owl database there are 19 data points for CSO on the Inyo National Forest with 6 positive detections all occurring in the area just northwest of Monache Mountain from 1988-1991. A pair was observed in the area on 2 occasions during that same time frame. At the north end of the Inyo National Forest, there are also two positive detections in the Boundary Creek and Red Meadows area from 1981-1982. Individual owls may persist on the Inyo National Forest, but is unknown if the forest contains a viable population of California spotted owl.

Table F-7. Key threats, plan components, and expected effects on California spotted owl

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of quality habitat for nesting, roosting and foraging loss and loss of connectivity/movement corridors due to management activities such as fuels reduction treatments and timber harvest.	WTR-FW-STD 02 TERR-FW-STD 01 TERR-FW-GDL 01-02 TERR-OLD-GDL 01-02 SPEC-FW-GDL 01, 04 FIRE-FW-STD 02 FIRE-FW-GDL 01-02 TIMB-FW-DC 01-03 TIMB-FW-GDL 02-03	SPEC-CSO-STD 01-05 SPEC-CSO-GDL 01-11 SPEC-FW-DC 01-02 SPEC-FW-GDL 01 SPEC-FW-STD 01	Ecosystem level plan standards and guidelines provide direction for maintaining habitat in areas where management activities take place. Standards and guidelines ensure key old growth components including large trees, snags and structural heterogeneity are maintained during vegetation management activities in old growth forest, roost/nest trees are protected and maintained, and direction from existing habitat conservation strategies is used where applicable. Desired conditions and guidelines for fire and timber management promote ecological restoration practices that will improve forest resilience and maintain spotted owl habitat. Species specific desired conditions, standards and guidelines ensure protected activity centers and nest site conditions are provided for during vegetation and fuels treatments, high severity prescribed fire is minimized, and operating periods are limited during the breeding season. Land management activities support conditions for survival and reproduction of at risk species. Standards and guidelines for natural and prescribed fire have intended effects for ecological benefit. A forestwide species-specific guideline further reinforces the retention of known nest and roost trees used by species of conservation concern or raptors.

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of quality habitat for nesting, roosting and foraging due to other stochastic events such as wildfire and climate change which can result in a reduction of snowpack and mature forest conditions.	WTR-FW-DC 01-02 TERR-FW-DC 01-06,08-09 TERR-MONT-DC 01-02 TERR-OLD-DC 01-07 TERR-ALPN-DC 01-03 & 05 TERR-DMC-DC 01-06 TERR-JEFF-DC 01-07 TERR-RFIR-DC 01-07 TERR-LDGP-DC 01-10 TERR-FW-OBJ 01-02 FIRE-FW-DC 01 DA-WILD-DC 02-03 TERR-FW-OBJ 01-02	SPEC-CSO-DC 01-05 SPEC-FW-DC 01-02 SPEC-FW-GDL 04 TERR-FW-DC 05-06	Ecosystem level plan components ensure species will have adequate habitat for movement, dispersal, feeding, and reproduction that may otherwise be lost due to climate change and other stochastic events and that wildfires are allowed to burn within the natural range of variability and contribute to ecosystem function. Desired conditions emphasize resilience in spotted owl habitat and promote old forest habitat components such as larger trees, snags and coarse woody debris and structures for nesting such as witches' brooms. Species specific desired conditions ensure habitat is well distributed for spotted owls and that protected activity centers ensure the best habitat for nesting and roosting is maintained. Territories contain habitat that is resilient to stressors and includes heterogeneity with groups of denser trees mixed in with areas of lower canopy cover and open areas such as meadows which provide important foraging habitat. Large trees and snags are abundant and provide nesting habitat and habitat for prey species. Habitat for species of concern are resilient to climate change and other stressors, ecosystems are healthy.
Loss of pine-oak component: large trees over 12 inches in diameter, snags, logs	TERR-OAK-DC 01 TERR-OAK-ST-01	N/A	Ecosystem level desired conditions ensure oak trees, snags, and down logs provide habitat for spotted owls, and that snags and cavities provide shelter, and resting and nesting habitat. A standard ensures that large oaks greater than 12 inches in diameter will be retained during fuel treatment activities.

Key Ecological Conditions in Plan Area

Forests containing old growth characteristics (dense vegetation and canopy cover, snags, cavities, larger trees and large down woody debris) in coniferous and mixed pine-oak forests are critical to California spotted owl. On the Inyo National Forest, these ecological conditions can be found in the mixed conifer and upper montane forest ecological zones that consist of red fir, Jeffrey pine, and lodgepole pine. The mixed conifer assessment type is most prevalent on the Kern Plateau and includes various combinations of white fir, red fir, and one or more pine species, typically with a very sparse understory. The majority of the mixed conifer assessment type (which does not necessarily include all mixed conifer stands) in the core timber management area was included in the Owens River Headwaters Wilderness, designated in 2009. With the exception of Monache Meadow on the Kern Plateau, approximately three-fourths of the mixed conifer assessment type is within wilderness. The majority of the red fir type is located on the Kern Plateau and Reds Meadow Valley areas where a large proportion (80 percent) of the red fir forest type across the southern Sierra is within designated wilderness. The Inyo National Forest has 383,336 acres of subalpine conifer forest (19-20 percent of the national forest), 118,039 acres of red fir (6 percent) and 45,671 acres of mixed conifer (2 percent) for potential use by the owl. However, not all of this habitat may contain the specific ecological conditions needed for nesting and roosting.

Key Threats to Persistence

Loss of prey and nesting habitat that includes features such as logs, snags and adequate understory have been risk factors. Habitat loss, degradation, or loss of connectivity from high severity fire and management activities such as timber harvest; expansion of barred owls and climate change are additional factors.

Threats Under Forest Service Control

Land management includes the following key threats:

- Habitat loss (especially loss of nesting, resting and foraging habitat, large old trees and dense canopy cover) and disturbance from activities such as vegetation management, timber removal, wildfire, and fuels treatment.
- Connectivity and habitat fragmentation, loss of movement corridors and loss of genetic diversity due to isolation.
- Habitat loss resulting from climate change and interrelated effects of natural disturbances such as wildfire.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-7 above. The primary threat from loss of nesting and roosting habitat is addressed at the species level.

- Terrestrial Ecosystems and Vegetation (Old growth, Mixed conifer, lodgepole pine, mixed conifer, Oak, and Jeffrey pine)
- Watersheds
- Timber
- Fire
- Alpine and Montane Zones

Most of the threats for California spotted owl can be addressed through plan components that emphasize resilient, connected forests characterized by complex structural attributes such as closed canopy, large old trees, snags and coarse woody debris, which owls need for movement, foraging and reproduction. Timber harvest gas been cited as primary threat for spotted owl persistence (Gutierrez et al. 2016); however, most of the area managed for timber on the Inyo National Forest do not currently overlap with the mixed conifer ecosystem type preferred by spotted owls, much of which occurs in wilderness (as noted under ecological conditions above). Several ecosystem-level plan components address this potential threat by promoting restoration based processes that ensure wildlife habitat is considered during project design, connectivity for wildlife is restored, and the removal of key habitat features such as snags, is minimized (TIMB-FW-DC 01-03;TIMB-FW-GDL 02-03). The greater threat to California spotted owl on the Inyo National Forest is habitat loss and fragmentation resulting from high-severity fire. High-severity fires that result in the loss of dense mature forest, large snags and downed logs effectively remove preferred nesting and roosting habitat and can take centuries to regrow. Desired conditions for Fire and Terrestrial Ecosystems (FIRE-DC-01, TERR-FW-DC 02) promote wildfire that functions within its natural range and contributes ecosystem integrity and fire adapted systems that are resilient to climate change and other stressors. Two forestwide objectives (TERR-FW-OBJ 01-02) emphasize the restoration of species composition and structure and low- to moderate-severity fire. Standards and guidelines for fire that should benefit the owl (FIRE-FW-STD 02, FIRE-FW-GDL 01-02) minimize disturbance during fire suppression in wilderness, promote the use of managed wildfire to meet resource objectives and limit high-severity fire effects in old forest habitat.

In addition to the ecosystem-level components mentioned above, several species-specific plan components were added to focus on specific spotted owl habitat needs, like nesting and roosting habitat. Loss of old growth habitat and key structural attributes such as dense canopy and large trees for nesting and roosting are key threats and desired conditions specifically added for California spotted owl (SPEC-CSO-DC 01-05) ensure spotted habitat is well distributed throughout the landscape providing for foraging, nesting, and roosting habitat; promoting movement across large landscapes and ensuring protected activity centers maintain the best quality habitat for nesting and roosting including habitat with canopy cover that may be outside the natural range of variation. Standards and guidelines (SPEC-CSO-STD 01-05; SPEC-CSO-GDL 01-11,) place constraints on operating periods and activities that might disturb nesting owls in protected activity centers during the breeding season, ensure mechanical treatment of vegetation is limited, and that overstory trees and trees greater than 24 inches in diameter are generally retained during forest management activities.

Other species-level guidance that provides additional emphasis on retention of key nest trees and encourages the use of approved conservation strategies in project design includes SPEC-FW-STD 01 and SPEC-FW-GDL 01, 04.

The ecosystem-level and species-specific plan components are designed to move existing habitat conditions for California spotted owl toward a more ecologically resilient state than what currently exists. However, ultimate long term persistence and viability of this species will depend on management actions (or inactions) on adjacent landscapes. Two goals (SPEC-FW-GOAL 01, 03-04) encourage cooperative protection and restoration of habitat across ownerships boundaries which should benefit the owl throughout its range.

Threats Not Under Forest Service Control

- Habitat competition and hybridization with barred owls
- Climate change

Barred owls are an increasing risk factor for California spotted owls in the Sierra Nevada. Barred owls can hybridize and also outcompete spotted owls. Barred owls were first recorded within the range of the California spotted owl in 1989 on the Tahoe National Forest. Two sparred owls (hybrids of spotted and barred owls) were reported in the Eldorado National Forest during 2003 to 2004 (Seamans et al. 2004). Barred owls were first recorded in the southern Sierra Nevada in 2004 (Steger et al. 2006). Ongoing research has documented 73 records of barred or sparred owls in the Sierra Nevada to date, with the majority of records from the northern Sierra Nevada (Tahoe, Plumas, and Lassen National Forests). Five new records of barred owls were documented in the Stanislaus and Sierra National Forests in 2012, indicating further range expansion of barred owls in the southern Sierra Nevada. In 2017, confirmed barred owls were on the Sequoia National Forest. Barred owl numbers are likely higher than documented in the Sierra Nevada, as there have been no systematic surveys for them to date.

Climate change further exacerbates drought conditions and insect outbreaks, which can lead to uncharacteristically large wildfire. While the Inyo National Forest cannot directly control climate change, ecosystem plan components as mentioned above provide conditions resilient to ecosystem stressors and the interrelated effects of climate change.

Summary

The best available science indicates declining population trends throughout the range of the California spotted owl, low fecundity, high juvenile mortality, and habitat specificity. These life history characteristics combined with relevant threats and stressors, including habitat loss resulting from high-severity fires and the expansion of barred owls, indicate substantial concern about the California spotted owls capability to persist over the long term in the plan area. Climate change and potential drought-related effects will likely continue to exert pressure on the key ecological conditions (as noted above) that this species depends upon. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of California spotted owl within its range. However, limited occurrence data for California spotted owl and the forest's limited amount of mixed conifer forest (approximately 2 percent) suggest it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of the California spotted owl in the plan area.

Great Gray Owl

Determination: It is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the great gray owl in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Meadows and early seral-stage openings that support sufficient prey (such as pocket gophers and voles) which are adjacent to mature coniferous forests. Mature forests, typically more mesic than xeric, with supporting features such as large-diameter trees and snags (greater than or equal to 24 inches in diameter) to provide nesting sites. Dense canopy cover (greater than or equal to 65 percent). Habitat occurs between 3,500 feet and above.

Table F-8 summarizes key threats, plan components, and expected effects on great gray owl.

Table F-8. Key threats, plan components and expected effects on great gray owl

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of habitat (mature conifer and meadow), along with loss of connectivity/movement corridors due to management activities such as fuels reduction treatments and timber harvest, along with recreational use.	WTR-FW-STD 02 RCA-MEAD-OBJ 01 MA-RCA-GDL 01 TERR-FW-STD 01 TERR-FW-GDL 01-02 TERR-OLD-GDL 01-02 MA-CBRA-DC 02 FIRE-FW-DC 01-02 FIRE-FW-STD 02 FIRE-FW-GDL 01-02 MA-RCA-GDL 04	SPEC-FW-DC 01-03 SPEC-FW-GDL 01,04 SPEC-FW-STD 01	Ecosystem level plan components ensure species will have adequate habitat for movement, dispersal, feeding, and reproduction and provide direction for maintaining key habitat elements such as large conifers in areas where management activities take place and ensure wildfires are allowed to burn within the natural range of variability and contribute to ecosystem function. Specific measureable objectives move meadow habitat toward desired conditions necessary to support adequate prey species. Management Area direction for backroad recreation promotes desired conditions that promote species diversity and movement corridors and large wild tracts of land in undeveloped landscapes. Species specific guidance provides additional emphasis on retention of key habitat features such as nest trees and encourages the use of approved conservation strategies in project design and emphasizes habitat that improves conditions for species of conservation concern.
Loss of quality habitat due to climate change or other stochastic events, which result in a reduction in snowpack and mature forest conditions.	WTR-FW-DC 04 TERR-FW-DC 01-06, 08-09 TERR-MONT-DC 01-02 TERR-OLD-DC 01-07 TERR-ALPN-DC 01-03,05 TERR-DMC-DC 01-06 TERR-JEFF-DC 01-07 TERR-RFIR-DC 01-07 TERR-LDGP-DC 01-10 MA-RCA-DC 01, 05,09 DA-WILD-DC 02-03 TERR-FW-OBJ 01-02	N/A	Ecosystem level plan components ensures species will have adequate habitat for movement, dispersal, feeding, and reproduction that may otherwise be lost due to climate change and other stochastic events. Desired conditions for terrestrial ecosystems support habitat that is complex and supports movement and connectivity for old growth specialists. Desired conditions emphasize resilience and promote old growth habitat components such as larger trees, snags and coarse woody debris and structures for nesting such as witches' brooms

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of quality meadow and other open habitat due to conifer encroachment and or climate change which causes drying/moisture loss.	RCA-MEAD-DC 01-07 RCA-MEAD-OBJ 01	MA-RCA-DC 02	Ecosystem level plan components ensures owls will have adequate meadow and open habitat that supports sufficient prey species like gophers and voles. Conifer encroachment is minimized and specific, measurable objectives move meadow conditions toward desired conditions. Species specific plan components promote riparian conservation areas that contribute to species of conservation concern and support meadows which contain prey species and foraging habitat.
Loss of early seral habitat	TERR-CES-DC 01-03 TERR-CES-GDL 01-03, 05	N/A	Ecosystem level plan components support early seral habitat for prey species. Desired conditions ensure complex early seral habitats are distributed across the landscape and key habitat elements such as large diameter snags are available for resting habitat. Guidelines ensure restoration projects maintain ecosystem integrity, important wildlife habitat, and that large fires minimize harvest to provide areas of complex early seral habitat for species that need them.
Recreation/Vehicle strikes due to low perching behavior.	MA-CBRA-DC 02 DA-WILD-DC 05,08 INFR-FW-DC 03	N/A	Management Area direction for backroad recreation promotes desired conditions that promote species diversity and movement corridors and large wild tracts of land in undeveloped landscapes. Desired conditions ensure recreation will not cause adverse impacts to at-risk-species and desired conditions for infrastructure ensure roads allow for healthy wildlife movement and minimal collisions.

Information on Current Distribution of the Species in the Planning Unit

Great gray owls are thought to occur throughout the Sierra Nevada range though local distribution may be highly variable. There are no records in the NRIS database for great gray owl on the Inyo National Forest; however, there have been incidental sightings. In 2015, an injured bird was retrieved by hikers just north of Lake Mary in Mono County (e-bird data, accessed May 17, 2017). The adjacent Sequoia and Sierra National Forests have 28 and 330 records respectively, with several detections close to the Inyo National Forest boundary (see Figure 4 of Krueger (2016) for a mapped distribution of the great gray owl based on detections). It is important to note, that these areas represent the southeastern most edge of the species' year-round range (Zeiner et al. 1990, Bull and Duncan 1993, Gogol-Prokurat 2016) and only a small portion of the Inyo National Forest is likely to provide suitable habitat for the owl, which may be a factor in their limited distribution. Adult owls were last documented in Inyo and Mono counties by winter (1986) approximately 30 years ago. A review of Sierra-Nevada Avian monitoring Information Network data, a collaborative project between the Forest Service and Point Blue Bird Observatory yielded no recent observation information for great gray owls (Ballard et al. 2008). In eBird, the Inyo National Forest has 1 record of 1 individual great gray owl within the national forest boundary, and 3 records of 3 individuals from within 5 miles of the national forest boundary. The California Natural Diversity Database (CNDDB) has 1 within the national forest boundary, and 3 within a 5 mile buffer of the boundary. Individual owls may persist on the Inyo National Forest, but it is unknown if the Inyo National Forest contains a viable population of great gray owls.

Key Ecological Conditions in Plan Area

Meadows and early seral-stage habitats that support sufficient prey (such as pocket gophers and voles); pine and fir forests adjacent to meadows between 3,500 and 7,000 feet (Wu 2016). Two factors considered most important in determining habitat use by breeding great gray owls are availability of nest sites and availability of suitable adjacent foraging habitat such as meadows (Duncan and Hayward 1994). On the Inyo National Forest, these ecological conditions can be found in the mixed conifer and upper montane forest ecological zone which consists of red fir forest, Jeffrey pine forest, and lodgepole pine, intermixed with meadows that form a patchy mosaic across the landscape. On the Inyo National Forest, the majority of the red fir type is located on the Kern Plateau and Reds Meadow Valley areas (USDA 2013). It is worth noting that a large proportion (80 percent) of the red fir forest type across the southern Sierra is within designated wilderness.

Key Threats to Persistence

Small population size, and loss of meadow habitat and meadow drying related to climate change, conifer encroachment or management activities (such as livestock grazing) that can lead to loss of meadow habitat and cover for small mammalian prey species are all potential threats.

Threats include activities such as fuel reduction treatments that negatively affect or remove mature forest and or key structural elements such as large live and dead trees (greater than 24 inches diameter), logs, and coarse woody debris, and that cause losses in connectivity and movement. Key structural elements are important for roosting, nesting and hunting. Higher fuel loading, and changes in forest structure and composition associated with fire suppression coupled with a changing climate and related increases in drought and insect outbreaks can also cause significant changes in forest structure, function and composition (Meyer 2013).

Additional threats include vehicle strikes, which are considered a significant source of direct mortality because of their use of low perched when hunting (Wu et al. 2016).

Threats Under Forest Service Control

Land management can be summarized into the following key threats:

- Habitat loss (especially loss of nesting/roost habitat (large old trees and dense canopy cover) and foraging habitat (open meadows) and disturbance from activities such as vegetation management (e.g. timber removal, fuels treatment) and recreation.
- Connectivity/habitat fragmentation, loss of movement corridors and loss of genetic diversity due to isolation.
- Habitat loss resulting from climate change and natural disturbance such as wildfire and insect out breaks

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-8 above.

- Terrestrial Ecosystems and Vegetation (Subalpine and Montane Zones, Complex Early Seral, Red Fir, Jeffrey Pine, Lodgepole Pine, and Mixed Conifer)
- Infrastructure
- Watersheds
- Wilderness
- Riparian Conservation Areas (Meadows)
- Management Areas (Challenging Backroad, Riparian Conservation)

Most of the threats for great gray owl can be addressed through ecosystem-level plan components that emphasize resilient, connected forests that contain the complex structural attributes and old growth components owls need for survival and reproduction. However, species-specific plan components have been added in a few instances for greater clarity and emphasis. Loss of nesting and roosting habitat (dense canopy and large trees) attributes for nesting is a key threat for great gray owl and several forestwide components should ensure these attributes are provide for and protected during management activities. Critically, a standard (SPEC-FW-STD 01) specifies that design features, mitigation, and project timing considerations are incorporated into projects that may affect occupied habitat for at-risk species. While two guidelines (SPEC-FW-GDL 01, 04) maintain protection for known roost or nest trees used by species of conservation concern or raptors and that approved conservation strategies will be incorporated into project design where appropriate. Desired conditions (SPEC-FW-DC 01-03) specify that habitats for at-risk species support self-sustaining populations within the inherent capabilities of the plan area and that the ecosystems they depend upon will be resilient to uncharacteristic fire, climate change, and other stressors.

Loss of quality meadow habitat due to drying effects from climate change, conifer encroachment and livestock use is another key threat to great gray owl because loss of meadow habitat decreases foraging opportunities. Decreases in grass complexity and structure decrease optimal habitat for the owl's small mammalian prey base. A desired condition for riparian conservation areas (MA-RCA-DC 02) maintains ecological conditions that will support persistence of species of conservation concern habitat needs in those areas.

The ecosystem-level and species-specific plan components are designed to move existing habitat conditions for great gray owl toward a more ecologically resilient state than what currently exists. However, ultimate long term persistence and viability of this species will depend on management actions (or inactions) on adjacent landscapes. Two forestwide goals for all species (SPEC-FW-GOAL 01, 03-04) encourage cooperative protection and restoration of habitat across ownerships boundaries which should benefit the owl throughout its range. Additional goals encourage partnerships and collaboration to facilitate restoration in terrestrial ecosystems (TERR-GOAL 01); reduce fuel accumulations and promote and restore more fire-resilient systems (FIRE-FW-GOAL 01-05, 10) and ensure complex early seral habitat is provided for (TERR-CES-GOAL 01-02, 05).

Threats Not Under Forest Service Control

- Small population size
- Climate change

The great gray owl population in California is at risk because it is very small (Hull et al. 2010). Small populations are more susceptible to inbreeding, population bottleneck, and founder effects. Retention of maladaptive genes or the loss of adaptive genes can lead to reduced genetic diversity (Shaffer 1981, Lande 1993) and small populations are less able to recover from losses due to environmental events such as large wildfires (Wu et al. 2016). Climate change further exacerbates drought conditions, insect outbreaks, meadow drying and wildfire. While the Inyo National Forest cannot directly control climate change, ecosystem plan components as mentioned above provide conditions resilient to ecosystem stressors and the interrelated effects of climate change.

Summary

The fragmented nature of upper montane forests on the Inyo National Forest, coupled with declining and or small population numbers of the great gray owl, and reductions in meadow habitat from climate change and conifer encroachment may put this species at risk. While the great gray owl is not currently known to breed on the Inyo National Forest, there have been incidental sightings on the national forest as well as detections close to the national forest boundary. Recreation, which is predicted to increase over time, also leads to concern for the species persistence. Species viability of great gray owl on the Inyo National Forest is currently uncertain. Proposed plan components are designed to move habitat conditions to a more desired ecological state than what currently exists. The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. The Inyo National Forest is at the very edge of the species' range and it may not be within the inherent capability of the land to provide for a viable population of great gray owl on the Inyo National Forest. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of great gray owl within its range. However, due to uncertainty about the species current viability, the limited amount of habitat on the Inyo National Forest, and potential future threats associated with climate change, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of great gray owl within the plan area.

Mt. Pinos Sooty Grouse

Determination: It is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Mt. Pinos sooty grouse in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Relatively open coniferous and pine habitat with little understory cover. Woodlands and subalpine forests also provide habitat, large trees.

Table F-9 summarizes key threats, plan components, and expected effects on Mt. Pinos sooty grouse.

Information on Current Distribution of the Species in the Planning Unit

The Mount Pinos sooty grouse has likely been extirpated from much of its historic range, which occurred from Kings Canyon south and west to the Mt. Pinos region of Kern and Ventura Counties (Bland 2013, Ziener et al. 1990). It is now most abundant at the northern limits of its current range, which occur south of 37 degrees north latitude. On the Inyo National Forest, this includes areas south of the town of Independence, in suitable habitat found in Kearsarge Pass, Onion Valley, Mt. Whitney and Mt. Whitney Portal, Olancha Creek, and Haiwee Canyon (Bland 2013, J. Bland Pers. Comm. 2017).

The Inyo National Forest does not currently have information on abundance or population trend for this species on the national forest and viability of this species in the plan area is uncertain. However, incidental sooty grouse sightings are plentiful in eBird (2012) and information on Mount Pinos sooty grouse subspecies locations can be extrapolated from that data using geographical boundaries and phenotypic markers (J. Bland Pers. Comm. 2017). Extant populations south of Kings Canyon and north of Kern Gap (Tulare/Kern Co. line) are *howardi* which can be distinguished from the *sierrae* subspecies primarily by tail measurements and plumage characteristics. In the California portion of the Inyo National Forest, local game bird populations appear healthy but fluctuate drastically from year to year depending on moisture. In Mono County, California Department of Fish and Wildlife does not conduct upland game bird surveys, with the exception of some localized sooty grouse hoot surveys in the spring. These were last conducted in 2012 in the June-Lake area which occurs outside the known range of Mount Pinos sooty grouse. The results of that work are still being assessed, however, the *howardi* subspecies distinction was not made during those surveys (T. Taylor Pers. Comm.). Recent Breeding Bird Survey (BBS) data from the Inyo National Forest Assessment suggest sooty grouse populations were increasing to stable in California overall (BBS data 1966-2010) and stable at moderate levels in NV (1966-2010). There is no distinction made between Sooty grouse and the *howardi* subspecies for those data. However, Shuford and Gardali (2008) note moderate declines for *howardi* throughout its range.

Table F-9. Key threats, plan components and expected effects on Mt. Pinos sooty grouse

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of habitat, along with loss of connectivity/movement corridors due to management activities such as fuels reduction treatments and timber harvest, along with allowed hunting.	WTR-FW-STD 02 TERR-FW-STD 01 TERR-FW-GDL 01-02 TERR-OLD-GDL 01-02 DA-WILD-DC 05	SPEC-FW-DC 1-03 & 05 SPEC-FW-GDL 01, 04 SPEC-FW-STD 01	Ecosystem level plan components provide direction for maintaining key habitat elements such as large trees in areas where management activities take place. Species specific plan components for at risk species support intact ecosystems that contribute to sustainable populations. Hunting is in balance with species needs.
Loss of quality habitat due to climate change or other stochastic events, which result in a reduction in snowpack and changes in forest tree species composition.	WTR-FW-DC 01, 04 TERR-FW-DC 01-06, 08-09 TERR-MONT-DC 01-02 TERR-OLD-DC 01-07 TERR-ALPN-DC 01-03 & 05 TERR-DMC-DC 01-06 TERR-JEFF-DC 01-07 TERR-RFIR-DC 01-07 TERR-LDGP-DC 01--10 MA-RCA-DC 05 FIRE-FW-DC 01 FIRE-FW-STD 02 FIRE-FW-GDL 01-02 RCA-MEAD-DC 01-07 RCA-MEAD-OBJ 01 DA-WILD-DC 02-03	SPEC-FW-DC 01-02, 04	Ecosystem level plan components ensure species will have adequate habitat for movement, dispersal, feeding, and reproduction that may otherwise be lost due to climate change and other stochastic events such as uncharacteristic fire.
High endemism/restricted range, taxonomic uncertainty, hunting.	Not within Forest Service management authority.	N/A	

Key Ecological Conditions in Plan Area

Different vegetation types may be used depending on season (breeding/non-breeding). On the Inyo National Forest, high elevation (6000-10,000 feet) pine/fir forests with large trees can be found in the mixed conifer and subalpine assessment types on the Kern Plateau and adjacent areas (where they occur below 37 degrees north latitude). The mixed conifer assessment type includes various combinations of white fir, red fir, and/or one or more pine species, typically with a very sparse understory. The subalpine conifer forest assessment type includes whitebark pine, limber pine, foxtail pine, Great Basin bristlecone pine, lodgepole pine, western white pine, and mountain hemlock. Subalpine forest can have long winter snowpacks and relatively high canopy cover, as well as woodlands, with more open stands and relatively low canopy cover. With the exception of Monache Meadow on the Kern Plateau, approximately three-fourths of the mixed conifer assessment type is within wilderness.

Key Threats to Persistence

Sooty grouse are associated with upper elevation fir forests that may be affected by habitat loss from vegetation management and climate change. In early spring, sooty grouse congregate in open mature stands of conifers near the crests of ridges. These "hooting sites," or "spring activity centers" are traditional, and are returned to year after year, generation after generation. Loss of large trees from these areas are detrimental to grouse. In late spring and summer through fall, females and their young are associated with meadows and other mesic areas. In winter, sooty grouse seek dense conifer stands at high elevations where they subsist almost entirely on fir needles. Anticipated trends in the mixed conifer forest assessment type include higher fuel loading, and changes in forest structure and composition associated with fire suppression coupled with a changing climate. Subalpine conifer forests are highly vulnerable to climate change and are at risk of substantial future loss (average 85 percent) by the end of the century.

Threats Under Forest Service Control

Land management can be summarized into the following key threats:

- Habitat loss (especially loss of subalpine habitat) resulting from wildfire and interrelated effects of climate change
- Livestock grazing
- Loss of large trees

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, (SPEC-FW-DC 01-03) specify that habitats for at-risk species support self-sustaining populations within the inherent capabilities of the plan area and that the ecosystems they depend upon will be resilient to uncharacteristic fire, climate change, and other stressors, threats are primarily addressed through plan components under the following sections and are described in Table F-9 above.

- Terrestrial Ecosystems and Vegetation (Old growth, Subalpine, alpine and montane zones, dry mixed conifer, Jeffrey fir, Lodgepole pine, Red fir, Meadows.)
- Rangeland and Livestock grazing
- Fire
- Watersheds
- Riparian Conservation Areas (Meadows)

A primary threat to Mount Pinos sooty grouse is loss of subalpine habitat from climate change, which further exacerbates drought conditions, insect outbreaks, meadow drying and loss, and wildfire. While the Inyo National Forest cannot directly control climate change, ecosystem plan components as mentioned above provide conditions, which should be more resilient to ecosystem stressors and the interrelated effects of climate change. Desired conditions for the subalpine and alpine zone (TERR-APLN-DC 01-03) stress open woodlands with scattered trees to small, dense groves, infrequent small fires, and subalpine woodlands that are resilient to insects, diseases, fire, wind, and climate change. These components provide the key ecological conditions for persistence. A standard (TERR-FW-STD) for all terrestrial ecosystems further ensures large-diameter tress (greater than 30 inches in diameter) will generally be retained during management activities. A forestwide desired condition for hunting (SPEC-FW-DC 05) provides direction for high-quality hunting and fishing opportunities in locations that do not pose substantial risk to native species. However, ultimately sooty grouse hunting is authorized by California Department of Fish and Wildlife and Nevada Department of Wildlife (see information about hunting below).

Threats Not Under Forest Service Control

- Small population size/restricted distribution
- Taxonomic uncertainty
- Hunting

The Mt. Pinos sooty grouse is a highly endemic (possibly relict) species with a restricted distribution in California. The species is at risk because it is very small and susceptible to inbreeding, population bottleneck, and reduced genetic diversity. In addition, there is currently a taxonomic debate about the proper classification for the *howardi* subspecies. Ongoing genetic research suggests all remaining populations recognized as *howardi* possess the same mitochondrial haplotypes as *sierrae* populations further north, and that the now extinct populations south of Kern Gap were once a unique species. This work has not yet been published and resolving any taxonomic uncertainty is critical for future conservation work. Sooty grouse hunting is authorized by California Department of Fish and Wildlife and Nevada Department of Wildlife. California Department of Fish and Wildlife allow hunting on sooty grouse within both Inyo and Mono Counties with a daily take of 2 birds, and a maximum possession of 6 birds (California DFW 2017 Regulations). On the Inyo National Forest, specific hunt zones have been established and interest in hunting sooty grouse has been on the rise. The species continues to be allowed for hunting use suggesting populations of sooty grouse are at least stable. However, accurately differentiating between sooty grouse and the Mount Pinos subspecies in the field could be a potential risk factor. Two goals may help to increase awareness and field identification of the subspecies by working with partners on community and educational outreach (VIPS-FW-GOAL 06) and by providing interpretative outreach to enhance responsible recreation and to increase knowledge of related socioeconomic and environmental issues (REC-FW-GOAL 03).

Summary

Mount Pinos sooty grouse is currently found in a geographically restricted area and may be a relict population of a once more widespread species that occurred in the Southern Sierra Nevada. Due to this limited distribution and a moderate population decline throughout its range, the Inyo National Forest may provide important refugia habitat. However, taxonomic uncertainty about the species may be a potential barrier for conservation action and hunting pressure could be an additive factor if the subspecies is misidentified in the field. In addition, sooty grouse habitat, particularly in the subalpine forest, may be especially at risk from climate change and interrelated effects of wildfire and drought, further increasing viability risk. Species viability of Mt. Pinos

sooty grouse is currently uncertain; however, proposed plan components are designed to move habitat conditions to a more desired ecological state than what currently exists. The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of Mount Pinos sooty grouse within its range. However, due to uncertainty about the species current viability, the limited amount of habitat on the Inyo National Forest, and potential future threats associated with climate change and taxonomic uncertainty, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of Mount Pinos sooty grouse within the plan area.

Willow Flycatcher

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of the willow flycatcher in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Dense willow or other shrub thickets within large (more than 10 acres) wet meadows between 3,900-7050 feet elevation. Meadows with standing or running water needed for breeding.

Table F-10 summarizes key threats, plan components, and expected effects on willow flycatcher.

Information on Current Distribution of the Species in the Planning Unit

Two subspecies of willow flycatcher are known to occur on the Inyo National Forest. The federally endangered southwestern willow flycatcher, *E. t. extimus,* is not known to occur within the plan area. It is not possible to identify the different subspecies apart visually, only genetically. The Institute for Bird Populations synthesized data on willow flycatcher detection sites from numerous Federal, State, and private entities and found that the Inyo National Forest has a total of 32 active flycatcher sites (2,238 acres), constituting 7 percent of all currently used flycatcher habitat in the Sierra Nevada (N= 285 sites, 33,367 acres total). The authors of that study note that post and pre-breeding willow flycatchers in meadow habitat are regularly detected at MAPS stations and during point counts in Yosemite National Park and the Stanislaus, Sierra and Inyo National Forests (Loffland et al. 2014). The Inyo does not currently have forestwide information on population estimates or abundance; however, detailed monitoring data is available for the Rush Creek population, which occurs on the Inyo National Forest and also private lands managed by the Los Angeles Department of Water and Power. Point Reyes Bird Observatory Conservation Science conducted population and habitat studies for the lower Rush Creek population between 2001 and 2010. In 2001 there were two nesting pairs of willow flycatcher in the lower Rush Creek area. In 2004 the population increased to 16 individuals. Starting in 2004, the population decreased annually, to a population of six individuals in 2010 (3 males and 3 females) (McCreedy 2011). Willow flycatcher surveys have been conducted at various other locations on the Inyo National Forest between 1995 and 2012. Several willow flycatchers were detected during these surveys, however these were not thought to be breeding individuals. It is currently unknown if a viable population of willow flycatcher exists on the Inyo National Forest.

Table F-10. Key threats, plan components and expected effects on willow flycatcher

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss and degradation of riparian and wet meadow habitat (Watersheds and Riparian Conservation Areas)	WTR-FW-DC 01-06 WTR-FW-OBJ 01 WTR-FW-STD 01-03 RCA-MEAD-DC 01-07 RCA-MEAD-OBJ 01 RCA-RIV-DC 01-06 RCA-LPP-DC 01 RCA-SPR-DC 01-03 SPEC-FW-DC 01 FIRE-FW-GDL 04-06	SPEC-FW-DC 02-03 SPEC-FW-STD 01 SPEC-FW-GDL 01, 03,04,05 WTR-FW-DC 07	Ecosystem level plan components for watersheds, meadows and animals and plants provide direction to maintain adequate water flow and availability—supports ecosystem integrity and resilience and maintains riparian vegetation components and structural heterogeneity needed for breeding and sustaining healthy fish and wildlife populations. Specific and measurable objectives will move meadow habitat toward desired conditions. Species specific habitat components promote flow regimes that support healthy habitat specifically for at-risk species and place constraints on project level activities that could affect at-risk species habitat.
Loss and degradation of riparian and wet meadow habitat (Management Areas)	MA-CW-DC 02 MA-CW-OBJ 03 MA-CW-GDL 01-03 MA-RCA-DC 01, 03-10 MA-RCA-OBJ 01 MA-RCA-STD 04-06,10, 12, 13, 17 MA-RCA-GDL 01-04	MA-CW-DC 01, 03 MA-RCA-DC 02	Ecosystem level components for conservation watersheds mitigate loss of stream connectivity from road building/sedimentation in riparian areas and ensure key riparian ecological processes are maintained and protected while being compatible with multiple uses like recreation, vegetation management, or livestock grazing. Desired conditions for riparian conservation areas maintain connectivity and access to food, water, cover, and nesting areas. Species specific components ensure species of conservation concern will have connected habitats and refugia and that riparian conservation areas and conservation watersheds maintain high quality habitat to support persistence of species of conservation concern.

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Declining meadow condition due to poorly managed livestock grazing.	RANG-FW-DC 01-03 RANG-FW-STD 04, 07 MA-RCA-GDL 03	N/A	Ecosystem level plan components include desired conditions for rangelands that that promote biological diversity and ecosystem integrity, habitat for wildlife is available and contains diverse species composition and structure. Standards minimize impacts from range management in meadow and riparian locations, and limit disturbance such as trampling so it is compatible with willow flycatcher habitat needs such as species composition and intact hydrologic function and water flow.
Loss of habitat/habitat disturbance in wilderness.	TERR-FW-DC 01-06, 08-09 DA-WILD-DC-02-03,05 DA-WILD-REC1-DC 01 DA-WILD-REC2-DC 05 DA-WILD-REC3-DC 05	DA-WILD-DC 08	Ecosystem level plan components provide direction to maintain adequate water flow and availability, support ecosystem integrity and resilience and maintain vegetation components and structural heterogeneity needed for breeding, dispersal and foraging. Desired conditions maintain wilderness areas with ecologically sustainable levels of recreation. Species specific plan components minimize disturbance from trails in wilderness that could cause compaction and affect hydrologic connectivity in at-risk species habitat.
Placement of bird feeders in residential areas off forest which attracts brown headed cowbirds leading to increased rates of nest parasitism.	Not within Forest Service management authority.	N/A	

Key Ecological Conditions in Plan Area

Meadows occupied by willow flycatchers typically range in size from less than 1.0 acre to 716 acres, averaging approximately 80 acres, and with high water tables in spring and summer (standing waters and saturated soils). More than 95 percent of breeding meadows are larger than 10 acres, and meadows where multiple territories have fledged young are larger than 15 acres (Green et al. 2003). Breeding habitat consists of riparian stringers and meadow habitats at least 0.4 ha in size with saturated soils and dense shrubs, typically willow thickets 3-7 meters tall within or adjacent to meadows or forest clearings (Green et al. 2003). Migrants occur in a variety of open habitat types and are not as dependent on the integrity of any specific habitat or location.

On the Inyo National Forest, potential habitat can be found in the riparian meadow and riparian nonmeadow ecological assessment types. The largest riparian meadow systems on the Inyo occur on the Kern Plateau (approximately 10 percent) while about 1.5 percent of the land area in the Ansel Adams and John Muir Wildernesses is meadow. Previous project level analyses conducted on four meadows on the Kern Plateau (Tunnel, Tunnel Station, Ramshaw, and Little Whitney) on the Inyo National Forest have shown that elevation and canopy cover with influences of stand height are the most limiting factors in these meadows for flycatcher occupancy. The majority (88 percent) of willow flycatchers will nest between 4,000 and 8,000 feet elevation (Green et al. 2003), however, all of the meadows on the Kern Plateau occur above 8,000 feet. In addition, percent canopy cover was below the minimum percentage (76 percent) for breeding territories and characterized by even aged stands with little structural complexity.

The flycatchers in the lower Rush Creek area below Mono Lake occur in atypical habitat, at roughly 6,500 feet above sea level within a matrix of Great Basin big sagebrush scrub. Willow flycatchers on Rush Creek display preferences for high Wood's rose (*Rosa woodsii*) cover, lower (but still significant) willow cover, and low sagebrush scrub-associated species cover at the territory scale. Through 2010, 118 out of 188 located nests were built in Wood's rose (McCreedy 2011). Contrary to other reports in California, willow flycatchers at lower Rush Creek do not display any significant preference for the presence of surface water. Breeding territories averaged 59 meters from water.

Key Threats to Persistence

Loss and degradation of riparian and meadow habitat is considered the most significant threat to the persistence of willow flycatchers in the plan area. Degradation of habitat from management practices including livestock grazing (historic and present), road construction, and water diversion have resulted in a reduction of willow habitat, as well as compaction and drying of meadows. Drought and climate change are known to influence long-term patterns in meadow condition such as reductions in willow habitat; however, the recent declines in willow flycatcher population numbers and degradation of suitable breeding habitat have likely been accelerated due to anthropogenic factors (Green et al. 2003). Water diversions that result in a reduction of riparian vegetation, particularly willows, from either reduced water availability or inundation of riparian areas effectively degrade habitat quality for willow flycatchers.

Threats Under Forest Service Control

Land management can be summarized into the following key threats:

- Loss of meadow riparian habitat due to livestock grazing, conifer encroachment and any activities that cause compaction, meadow drying.

- Loss of meadow riparian habitat due to drought, and changes in precipitation and snowpack related to climate change.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, which specify that habitats for at-risk species support self-sustaining populations within the inherent capabilities of the plan area and that the ecosystems they depend upon will be resilient to uncharacteristic fire, climate change, and other stressors; threats are primarily addressed through plan components under the following sections and are described in Table F-10 above.

- Watersheds
- Terrestrial Ecosystems and Vegetation
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)
- Riparian Conservation Areas (Meadows; lakes and ponds; rivers and streams; seeps and springs)
- Rangeland Livestock Grazing
- Designated Areas (Wilderness recreation)
- Recreation

Loss of meadow and riparian habitat is a primary risk factor and a number of ecosystem-level plan components mitigate this threat, within forest service authority. This is achieved primarily through desired conditions, standards, guidelines and objectives for watersheds and riparian conservation areas as mentioned above.

Recreation activities near breeding territories including hiking, camping, fishing, and off-road vehicle use can negatively affect flycatchers. Effects may include noise disturbance and increased risk of predation through the attraction of jays and squirrels, known predators, to food scraps and garbage that accompany public use. Roads near meadow and riparian habitat that alter the hydrologic function of these adjacent features can result in degrading habitat through dewatering or drying of meadows and riparian zones (Kattelmann 1996) and increased sedimentation that can have deleterious effects to aquatic invertebrate prey (Erman 1977 *in* (Green et al. 2003)). Potential habitat for willow flycatchers on the Inyo National Forest occurs in wilderness and associated recreation activities could cause compaction and disturbance. A number of desired conditions in wilderness help to mitigate potential impacts caused by recreation and camping in riparian areas and the John Muir and Ansel Adams wilderness. These include DA-WILD-DC-02-03, 05; DA-WILD-REC1-DC 01; DA-WILD-REC2-DC 05 and DA-WILD-REC3-DC 05.

Livestock grazing can negatively affect flycatcher habitat; however, on the Inyo National Forest no known willow flycatcher sites currently co-occur on active livestock allotments (Krueger 2016). Should this become an issue in the future, however, several forestwide plan components (RANG-FW-DC 01-03; RANG-FW-STD 04, 07) will ensure range management that is compatible with flycatcher habitat needs by promoting native species composition and maintaining hydrologic function and water flow, conditions that support nesting and foraging habitat.

While loss of meadow riparian habitat is mitigated by a number of ecosystem-level plan components, several species-specific plan components provide additional clarity and emphasis. For example, WTR-FW-DC 07 provides direction for maintaining habitat for at-risk species where stream diversions or other flow modifications are not regulated by the Federal Energy Regulatory Commission and SPEC-FW-GDL 05 ensures water developments (such as a diversion

or well) should be avoided near streams or seeps and springs where there is high risk of dewatering aquatic and riparian habitats where at-risk species occur. Desired conditions for conservation watersheds and riparian conservation areas (MA-CW-DC 01, 03; MA-RCA-DC 02) provide high-quality habitat and functionally intact ecosystems that contribute to the persistence of species of conservation concern, and provide for breeding, dispersal, overwintering, and feeding habitats for at-risk species.

Threats Not Under Forest Service Control

- Water diversions and impoundments, growing water use demands
- Nest predation

Outside the national forest, water diversions have impacted willow flycatcher habitat. As stated in Green et al. (2003), riparian vegetation in the Owens Valley located downstream of the intake to the Los Angeles aqueduct has dramatically changed to a more xeric condition due to the lack of water, and no longer provides habitat for nesting willow flycatchers. Increased water demands coupled with more frequent drought events and drying conditions, will continue to act as negative stressors on flycatcher habitat. Water resource management activities, including maintaining perennial water quality, quantity, and timing of flows play a critical role in overall ecological function and sustainability and most of these activities are regulated outside the boundary of the national forest. Although the Inyo National Forest manages what it can in terms of ecological integrity, cumulatively when combined with management activities of other jurisdictions, these actions would not likely be sufficient to maintain the ecological integrity of riparian habitat over time and for this reason it will be difficult for the forest to fully restore this habitat to the reference conditions needed to maintain species persistence and viability.

Nest predation is common and is considered a likely factor most affecting population viability in the Sierra Nevada (Bombay 1999, Cain et al. 2003). Predators include milk snakes, common king snakes, red tailed hawks, weasels, chipmunks, and squirrels. Standing water around nests is considered a deterrent to mammalian predators and nests farther from trees exhibit higher nest success (Cain et al. 2003). Brood parasitism from brown-headed cowbirds is also identified as a threat to willow flycatchers. Brown-headed cow birds have a commensal relationship with domestic livestock. Rates of parasitism are variable and may affect flycatcher productivity at the local level (Green et al. 2003). Placement of bird feeders in residential areas off the national forest is known to attract brown-headed cowbirds, which in turn leads to nest parasitism of willow flycatchers. Brown-headed cowbird nest parasitism has also led to direct loss of nest productivity and recruitment on the national forest, especially in the lower Rush Creek area where it is the primary cause for low productivity (McCreedy and Burnett 2011). Loffland et al (2014) note historic locations on the Inyo National Forest in close proximity of one another, including the area west of Mono Lake in the vicinity of Rush Creek and Lee Vining Creek. These areas may be candidates for meadow restoration efforts; however, it is believed that high cowbird densities in this area resulting from backyard bird feeders and other human-induced attractions (rather than livestock grazing) would need to be addressed before attempting to attract willow flycatchers into those areas. Several goals focused on educational outreach and community stewardship may help mitigate this issue by increasing public awareness through the Partnerships, Volunteers, Interpretation and Stewardship program area (VIPS-FW-GOAL 06) and also by working with State and Federal wildlife agencies to reduce impacts of invasive species that are adversely affecting the persistence of native species populations in Riparian Conservation Areas (MA-RCA-GOAL 02).

Summary

Water use from expanding population pressure and human demands, coupled with increasing temperatures and temporal changes in precipitation and runoff events related to climate change, along with small declining populations that are subject to nest parasitism by brown-headed cowbirds will continue to put this species and its associated habitat components at risk on the Inyo National Forest. Historically, annual flooding was a major disturbance needed to maintain the vegetation levels necessary for many wildlife species that use riparian habitat. Riparian habitat is currently departed from historic conditions due in large part to growing population demands for water that result in stream diversions and impoundments. The watershed is not wholly contained within the national forest and the Inyo National Forest has little control over water management outside national forest boundaries. For this reason, it will be difficult for managers to fully restore this habitat to reference conditions. Species viability of willow flycatcher on the Inyo National Forest is currently uncertain; however, proposed plan components are designed to move habitat conditions to a more desired ecological state than what currently exists. The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence.

Based upon this evaluation, the final set of ecosystem-level plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of willow flycatcher within its range. However, key risk factors including climate change, ground water pumping and water diversions that occur off the national forest are not within Forest Service management authority and will continue to threaten meadow riparian/wet meadow habitat making it difficult to maintain viability in the plan area.

Black Toad

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of the Black Toad in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Perennially wet and moist habitat, usually associated with short plant cover which provides shaded/cooler environments and unobstructed access to still or slowly flowing water, rodent burrows in winter and shallow marsh and pond waters for breeding are all important habitat elements.

Table F-11 summarizes key threats, plan components, and expected effects on black toad.

Information on Current Distribution of the Species in the Planning Unit

The natural range of the black toad encompasses approximately 15 hectares (37 acres) of Deep Springs Valley, Inyo County, California, outside of the Inyo national forest boundary. Few records exist for the Inyo Forest. The toad is primarily associated with four spring complexes which lie on either private (Deep Springs College) or public (Bureau of Land Management) lands (Hammerson 2005). Due to the limited number of suitable habitats in the geographic range of the toad, each population is very vulnerable to stochastic events that could result in a local extirpation. The toads are highly aquatic in all seasons except winter, during which they disperse into upland habitats and seek refuge in rodent burrows or other refugia (Schuierer 1961, Kagarise-Sherman 1980, Murphy, et al. 2003).

Table F-11. Key threats, plan components and expected effects on black toad

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Drying of microsite conditions that include permanent wet meadow habitat, springs and seeps (groundwater dependent ecosystems) with riparian vegetation and refugia substrate. Loss of habitat due to climate change or other stochastic events.	WTR-FW-DC 01-06 SPEC-FW-DC 01 MA-RCA-OBJ 01 RCA-LPP-DC-01 RCA-SPR-DC 01-03 RCA-RIV-DC 01-03,06 TERR-SAGE-DC 01-05 RCA-MEAD-DC 01-07 TERR-PINY-DC 01-03	SPEC-FW-DC 02,04	Ecosystem level plan components ensure healthy functioning watersheds will continue to supply ground water flow and recharge necessary to maintain spring habitat. Healthy spring and upland habitat is available for species to complete life cycle needs and will be resilient to climate change. Species specific plan components ensure ecological conditions improve conditions for species of conservation concern and that riparian systems contain the appropriate microclimates and small scale habitat elements to provide refugia for at-risk species. Plan components ensure healthy functioning watersheds will continue to supply ground water flow and recharge necessary to maintain spring habitat and that water diversions do not co-occur in at-risk species habitat.
Direct mortality due to water diversions or activities that reduce and alter hydrology regimes, including, mining, suction dredge operations & fire suppression actions from drafting water pumps, and water impoundments that reduce current velocities and allow for sediment deposition, loss of springs and seeps from historic livestock and wild horse grazing.	TERR-SH-DC 01-02 TERR-SH-STD 01 SPEC-FW-STD 01 SPEC-FW-GDL 05 RANG-FW-DC 01-03 RANG-FW-STD 04, 07 MA-RCA-DC 01- 10 MA-RCA-OBJ 01 MA-RCA-STD 01-02, 04-06, 09-10, 12-13, 17 MA-RCA-GDL 01-04 FIRE-FW-GDL 04-06 WTR-FW-STD 01-03 MA-CW-OBJ 03 RCA-RIV-DC 05	SPEC-FW-DC 03 SPEC-FW-STD 01 SPEC-FW-GDL 05 MA-CW-DC 01, 03 WTR-FW-DC 07	Plan components maintain ecosystem integrity for fine-scale refugia habitat for endemic species like the salamander, will ensure forest activities maintain spring/seeps and also manage for and or remove livestock from riparian conservation areas as needed so that special aquatic features are in proper functioning condition. Standards and guidelines constrain site specific activities in riparian areas so habitat is maintained and also ensures no loss of egg masses of individuals from drafting water pumps during fire suppression actions in aquatic habitats Species specific desired conditions ensure land management activities maintain or improve conditions for survival and reproduction of at risk species; that ecological conditions improve conditions for species of conservation concern and that riparian systems contain the appropriate microclimates and small scale habitat elements to provide refugia for at-risk species. A species-specific standard ensures project design incorporates the needs of at-risk species while a guideline constrains water developments that could dewater seeps and springs and diminish salamander habitat. Desired conditions for conservation watersheds promote high quality habitat for species of conservation concern and habitat for breeding, dispersal, overwintering, and feeding for at-risk species.

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Direct mortality and population loss due to the amphibian fungus chytridiomycosis.	INV-FW-DC 01-02 INV-FW-STD 01-02 INV-FW-GDL 01	SPEC-FW-DC 02	Ecosystem level plan components minimize the spread of invasive species between aquatic habitats. A species-specific plan component ensures species of conservation concern are minimally impacted from disease.
High endemism, limited ability to disperse, restricted distribution and localized extinctions.	TERR-SH-DC 01-02 TERR-SH-STD 01	SPEC-FW-DC 04	Ecosystem level plan components ensure special habitats are maintained or improved. Species specific elements provide habitat refugia for at-risk species with restricted distributions.
Water diversions that occur off forest.	N/A	N/A	Not within Forest Service management authority

The BLM manages known black toad populations at Corral Springs, Buckhorn Springs, Bog Mound Springs and Antelope Spring. All but Antelope Spring are immediately adjacent to Deep Springs Lake. Antelope Spring is approximately 3 miles north of these springs and is situated on a hillside adjacent to the boundary of Inyo National Forest (Wang 2009; USDA 2016). Forest level surveys conducted in spring of 2017 following a rain event noted Antelope Spring had at least 10 individual egg masses.

There are 6 records for black toad in the NRIS database with the most recent detections made in 2011 at two springs on the Inyo National Forest (Sam's Spring and an unnamed spring in Birch Creek). Birch Creek, however, was recently affected by alterations in flow regime and follow up surveys has failed to detect this species in that area. An incidental observation was reported in 2016 within the southeastern boundary of the White Mountain Ranger District near Deep Springs but follow up surveys are needed to confirm this sighting (Pearce 2016).

Key Ecological Conditions in Plan Area

Black toad is an aquatic species restricted to wet areas near permanent springs with subpopulations separated by arid desert scrub at least 1.5 km apart. Short plant cover which provides shaded/cooler environments and unobstructed access to still or slowly flowing water, rodent burrows in winter and shallow marsh and pond waters for breeding are all important habitat elements. On the Inyo National Forest, the general area of occurrence is characterized by the Pinyon juniper/sagebrush and desert assessment types. The Antelope Spring BLM habitat differs greatly compared to nearby Sam's Spring Forest Service habitat. Antelope Spring provides higher quality and greater quantity of suitable breeding and dispersal habitat than Sam's Spring. Antelope Springs may get approximately 10-20 percent shade from sedges & reeds. Habitat at the far end of the reach is characterized by open sedge/reed mud breeding grounds with sparse cottonwood, transitioning to rose, and then willow at the source. The edge quickly moves into sage habitat. Sam Spring shows signs of historic water diversions, vegetation encroachment that may contribute to the lack of surface flow/change in suitability. Limited data on Buckhorn Spring has been reported. Forest surveys in spring of 2017 noted very little water at the site despite a recent rain event.

Key Threats to Persistence

Climate change, disease, and high endemism/restricted distribution are the primary threats to the Black toad on the Inyo National Forest and are largely outside of forest service control. Another secondary threat beyond the control of the Forest is the reduction of water flow by diversions and geologic activity. The water source supplying the occupied springs comes from an area within a geologically active area; thereby creating the potential for groundwater interruptions through natural forces should an earthquake with sufficient magnitude occur and interrupt groundwater flow. Any activities or processes that lead to spring drying or disruption of water flow (e.g. water diversions/dams, in-stream mining, stream capping, feral livestock (burros and cattle), upstream water pumping) will lead to direct mortality (desiccation); loss of habitat/ vegetation encroachment into open waters is also a threat (USDA 2013a)

Threats Under Forest Service Control

Land management can be summarized into the following key threats:

- Loss of seeps and springs/riparian habitat from diversion of stream flow, and related disturbances such as vegetation management activities or livestock grazing that occur on the Inyo National Forest.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-11 above.

- Watersheds
- Terrestrial Ecosystems and Vegetation (Special habitats, Pinyon juniper, Sagebrush)
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)
- Riparian Conservation Areas (Meadows; lakes and ponds; rivers and streams; seeps and springs)
- Fire

Loss of seeps and springs in desert riparian habitat is the primary risk factor affecting persistence of black toad and a number of ecosystem-level plan components mitigate this threat, within Forest Service authority. This is achieved primarily through desired conditions, standards, guidelines and objectives for watersheds and riparian conservation areas. In addition, plan components TERR-SH-DC 01-02 and TERR-SH-STD 01 ensure special habitat are maintained or improved, that refugia is provided for species with restricted distributions and that special habitat needs will be incorporated in project design and implementation. A desired condition for Conservation Watersheds (MA-CW-DC 02) mitigates key threats from disturbance events like wildfires, floods and landslides which can reduce hydrologic connectivity and eliminate spring habitat.

Species-specific desired conditions (SPEC-FW-DC 02-04) add additional emphasis and clarity by specifying that habitats for at-risk species support self-sustaining populations within the inherent capabilities of the plan area; that the ecosystems they depend upon will be resilient to uncharacteristic fire, climate change, and other stressors; conditions for species of conservation concern (including minimal impacts from diseases) will be improved; and the structure and function of the vegetation, aquatic and riparian system, and associated microclimate and smaller scale elements (like special features such as carbonate rock outcrops, fens, or pumice flats) exist in adequate quantities within the capability of the plan area to provide habitat and refugia for at-risk species with restricted distributions. Loss of spring habitat is the primary risk factor for black toad and guideline SPEC-FW-GDL 05 is particularly important because it constrains water developments (such as a diversion or well) near streams or seeps and springs where there is high risk of dewatering aquatic and riparian habitats where at-risk species occur. Desired conditions for conservation watersheds and riparian conservation areas (MA-CW-DC 01, 03; MA-RCA-DC 02) provide high-quality habitat and functionally intact ecosystems that contribute to the persistence of species of conservation concern, and provide for breeding, dispersal, overwintering, and feeding habitats for at-risk species. A desired condition for watersheds (WTR-FW-DC 07) provides direction that in-stream flows allow for at-risk species habitat and sustain riparian resources where stream diversions or other flow modifications are not regulated by the Federal Energy Regulatory Commission.

The springs on the Inyo National Forest occur in the Deep Springs Allotment, but cattle use has not been observed in the area, there are no authorized roads to the springs and activities are very limited in the area (USDA 2013a). Sam's spring is in an active cattle allotment; however, no signs of cattle use have been evident at the site. Livestock can degrade riparian habitat and cause sedimentation and compaction. Should this become an issue in the future several ecosystem-level plan components (RANGE-FW-DC 02; RANGE-FW-STD 04, 07) mitigate this threat by promoting areas with satisfactory soils, functional hydrology, and biotic integrity, minimizing the

addition of new livestock handling facilities in riparian conservation areas, and minimizing soil compaction from livestock disturbance such as trampling and trailing.

Threats Not Under Forest Service Control

- Water diversions and impoundments that occur outside the national forest boundary, growing water use demands.
- Loss of seeps, springs, and riparian habitat due to drought, flash floods and changes in precipitation patterns and snowpack related to climate change.
- Direct mortality and population loss due to the amphibian fungus *chytridiomycosis*.

Any impact that affects water supply or riparian values likely limits the amount of habitat available to the species that would possibly reduce population sizes. Climate change and changing precipitation patterns further exacerbate drought conditions and are key threats. Wright et al. (2013) list the black toad as one of the 10 most likely species to be affected by climate change. Under their modeling, the black toad could see a reduction in suitable habitat by up to 80 percent during the forecast period. While the Inyo National Forest cannot directly control climate change, ecosystem plan components as mentioned above in Table F-11 provide conditions which should be more resilient to ecosystem stressors and the interrelated effects of climate change.

Water resource management activities, including maintaining perennial water quality, quantity, and timing of flows play a critical role in overall ecological function and sustainability and most of these activities are regulated outside the boundary of the national forest. However, any action the Inyo can take to maintain the integrity of spring sources within Deep Springs Valley, such as Sam's Spring, which may have historic artesian wells that maintain the existing habitat. Ecosystem-level plan components for Watersheds (WTR-FW-DC 01-04, 07 and WTR-FW-STD 01-03) provide for healthy riparian and aquatic ecosystems within management authority, but because of growing population demands, climate change, and consumption of water resources outside the national forest, these habitats may not realize their full recovery potential limiting the Inyo National Forest's ability to provide for species viability.

The amphibian fungus *chytridiomycosis* has not yet been documented on the Inyo, but if it were to occur, could devastate isolated populations. Murphy et al. (2003) indicate there is serious concern about the fungus *Batrachochytrium dendrobatidis* (Bd) impacting populations of the black toad as it has many other amphibian species around the globe. The forestwide plan component SPEC-FW-DC-02 strives to minimize disease impacts on species of conservation concern and several desired conditions (INV-FW-DC 01-02) minimize the spread of invasive species (which include fungi) into new areas. A standard (INV-FW-STD 01) minimizes the spread of aquatic invasive species when moving between waterbodies and a guideline (INV-FW-GDL 01) constrains ground disturbing management activities that have the potential to spread invasive species in aquatic habitat.

Several goals, provide a vision for working across land management boundaries and these strategies, if implemented should collectively improve habitat for black toad throughout its range. A watershed goal (WTR-FW-GOAL 01) encourages collaborative work between adjacent land owners and agencies to improve watersheds across ownership boundaries while a goal for riparian conservation areas (MA-RCA-GOAL 01) promotes coordination with the State fish and wildlife agencies to address native aquatic species issues, including evaluating management and monitoring needs to address aquatic species requirements across ownership boundaries. Two goals (SPEC-FW-GOAL 03, 04) encourage a collaborative all-lands approach with other agencies, Tribes, and landowners including the California Department of Fish and Wildlife,

Nevada Department of Wildlife, and U.S. Fish and Wildlife Service to restore and maintain essential habitat for at-risk species and to improve habitat in the plan area for at-risk species and the ecological processes they depend on. Goals for invasive species (INV-FW-GOAL 01, 03) encourage cooperation and coordination across jurisdictional boundaries to help manage and control invasive and nonnative species and to evaluate the potential effects of climate change on their spread. This should help to minimize any future potential threats from the chytrid fungus. Finally, several goals for special habitats promote (TERR-SH-GOAL 01-02) promote cooperative partnerships to study, monitor and restore special habitats and to makes sure they are accurately documented within the corporate geographic information system.

Summary

The black toad is a restricted endemic, limited to several isolated populations in Deep Springs Valley in Inyo County within close proximity to and or on the Inyo National Forest. Individuals have been documented on the Inyo National Forest, but it is uncertain if a viable population exists there. The predominant population area is located on adjacent, private land. However, the Inyo will continue to provide additional (ephemeral) fringe habitat for dispersing adults. While the ecological conditions the black toad depends on appear generally stable and or trending in a positive direction based on current management, there is still substantial concern for the species persistence by simple virtue of its rarity and uncertain climate change related effects. As a result of this rarity and its limited distribution, this species is highly susceptible to stochastic events (like flash floods) and drying conditions resulting from increasing temperatures and precipitation events. Its limited dispersal ability and isolated populations put it at further risk for localized extinctions and susceptibility to disease outbreaks. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of black toad within its range. However, because this species primary habitat occurs outside the national forest boundary, and primary threats are not within Forest Service control, it is not within Forest Service authority to maintain or restore the ecological conditions necessary to maintain a viable population of the black toad within the plan area.

Inyo Mountains Slender Salamander

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of the Inyo Mountains slender salamander in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Flowing perennial streams, spring and seeps (non-pool forming) and moist substrates (for egg laying), canyons, solid-rock cliffs, areas where outcrops or talus are in contact with surface flow. In addition, small permanent desert springs and seeps with riparian vegetation. May extend out from riparian areas in canyon bottoms at higher elevations.

Table F-12 summarizes key threats, plan components, and expected effects on Inyo Mountains slender salamander.

Table F-12. Key threats, plan components and expected effects on Inyo Mountains slender salamander

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Drying and loss of springs and seeps (groundwater dependent ecosystems) from climate change or other stochastic events, flooding events which scour and diminish riparian vegetation.	WTR-FW-DC 01-06 SPEC-FW-DC 01 MA-RCA-DC 01-10 RCA-LPP-DC 01 RCA-MEAD-DC 01-07 RCA-MEAD-OBJ 01 RCA-RIV-DC 01-03,06 RCA-SPR-DC 01-03 TERR-SH-DC 01-02 MA-CW-DC 02 TERR-PINY-DC 01-03 TERR-SAGE-DC 01-05	SPEC-FW-DC 02,04	Ecosystem level plan components ensure healthy functioning watersheds will continue to supply ground water flow and recharge necessary to maintain spring habitat and that water diversions, within forest service management authority, do not co-occur in areas with salamanders. Forest-wide desired conditions for species ensure sustainable populations of animal species are supported by ecosystems that are resilient to fire, climate change and other stressors. Plan components for riparian and spring areas ensure healthy spring habitat is available for species to complete life cycle needs and that it will be resilient to climate change. Species specific plan components ensure ecological conditions improve conditions for species of conservation concern and that riparian systems contain the appropriate microclimates and small scale habitat elements to provide refugia for at-risk species.
Direct mortality due to water diversions and activities that reduce and alter instream flow including mining operations & fire suppression including actions from drafting water pumps. Activities include grazing and water impoundments that reduce current velocities and allow for sediment deposition or loss of springs and seeps from historic livestock and wild horse grazing.	MA-RCA-OBJ 01 TERR-SH-STD 01 WTR-FW-STD 01-03 RANG-FW-DC 01-03 RANG-FW-STD 04,07 MA-RCA-DC 01-08, 10 MA-RCA-OBJ 01 MA-RCA-STD 01-02, 04-06, 09-10,12-13,17 MA-RCA-GDL 01-04 MA-CW-OBJ 03 FIRE-FW-GDL 04-06 RCA-RIV-DC 05	SPEC-FW-DC 03 SPEC-FW-STD 01 SPEC-FW-GDL 05 MA-CW-DC 01,03 WTR-FW-DC 07	Ecosystem level plan components maintain ecosystem integrity for fine-scale refugia habitat for endemic species like the salamander, will ensure forest activities maintain spring/seeps and also manage for and or remove livestock from riparian conservation areas as needed so that special aquatic features are in proper functioning condition, hydrological flow is maintained and sedimentation is minimized. Plan components minimize loss of individuals from drafting water pumps during fire suppression actions in aquatic habitats. Species specific desired conditions ensure land management activities maintain or improve conditions for survival and reproduction of at risk species; ecological conditions improve conditions for species of conservation concern; and riparian systems contain the appropriate microclimates and small scale habitat elements to provide refugia for at-risk species. A species-specific standard ensures project design incorporates the needs of at-risk species while a guideline constrains water developments that could dewater seeps and springs and diminish salamander habitat.

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
High endemism, limited ability to disperse, restricted distribution and localized extinctions	TERR-SH-DC 01-02 TERR-SH-STD 01	SPEC-FW-DC 04	Ecosystem level plan components ensure special habitats are maintained or improved. Species specific elements provide habitat refugia for at-risk species with restricted distributions.
Mining including suction dredge operations	Prohibited under California State Law.	N/A	
Water diversions that occur off forest.	Not within Forest Service management authority	N/A	

Information on Current Distribution of the Species in the Planning Unit

The Inyo Mountains slender salamander is a restricted endemic limited to Inyo County. It has been known to occur on all four ranger districts with the majority of detections occurring on the White Mountains and Mount Whitney Ranger districts. Current population estimates of the species on the Forest are not available, however, it has been detected at 16 locations within the Inyo Mountains and the Inyo National Forest contains all known populations occurring on Forest Service lands in Region 5; figure 10 in Krueger (2016). Sites on the Inyo National Forest where salamanders have been repeatedly detected in recent (last 15) years include Water Canyon, Barrel Springs, and Lead Canyon. Individuals have been observed, but there is uncertainty as to whether a viable population currently exists on the forest.

Key Ecological Conditions in Plan Area

Inyo Mountains slender salamander occur exclusively in isolated springs in largely desert ecosystems comprised of desert scrub with habitat restricted to the Inyo Mountains and along the South Sierra escarpment. Salamanders tend to occupy seeps, a type of spring that does not form a channel or pool. Seeps tend to keep an area moist, but not wet, a condition suitable for salamanders. Many mosses and other plants occupy spring sites, thriving on cool and humid conditions. On the Inyo National Forest these systems occur in nonmeadow riparian areas include shrub- or tree-dominated springs and stream systems, with an estimated acreage of 3,093. Non-meadow riparian areas are present in the Eastern Slopes, Glaciated Batholith, Mono Valley, Owens Valley, and White Mountains subsections, but are not present in significant amounts (those wider than 300 feet) in the remaining subsections, including the Glass and Inyo Mountains. Flowing streams, spring/seeps (non-pool forming) and moist substrates (for egg laying), canyons, solid-rock cliffs, areas where outcrops or talus are in contact with surface flow are all important habitat elements.

Springs occur in most assessment areas throughout the Inyo National Forest. However, it is unknown how many of those springs support meadow or nonmeadow riparian ecosystems. The Inyo has very limited information related to spring flow alterations over time. In some arid portions of the national forest, springs and streams emanating from them are the only water source, and therefore very important for those ecosystems. Seeps on the Inyo can be described as groundwater dependent ecosystems and are supported by groundwater.

Key Threats to Persistence

Habitat alterations due to water diversion, feral livestock, human presence, mining, and climate change can all negatively affect salamander habitat by diminishing hydrological condition and water flow. The Inyo Mountains slender salamander is assumed to be restricted to spring habitats, any impact that influences stream flow (including duration and quantity) would threaten population persistence. If stream flow is reduced, it would be safe to assume that the obligate riparian plant species would decline and surface moisture would diminish. This would lead to a reduction in the habitats in which the salamander is found and could limit population size. Past impacts to stream flow and riparian areas include the capping of springs, diversion of stream flow, in-stream mining, and disturbances to riparian areas from feral livestock (burros and cattle). Several of these stressors are potentially restricted by State and Federal agencies who manage resources. As a Species of Greatest Conservation Need, California Department of Fish and Wildlife indicates *B. campi* is vulnerable to climate change and any changes in precipitation patterns that influence spring discharge would likely result in a decrease in available habitat. Wright, et al. (2013) modeled that up to 50 percent of the suitable habitat could be reduced by 2050 as a result of anticipated changes to climate. Because the Inyo Mountains slender

salamander is known from relatively few localities and populations are likely not connected, there is a risk of localized population extinctions.

Habitat in Barrel Canyon on the Inyo has been degraded, and at another location on the national forest, flash flooding in 1985 caused a scouring of the canyon bottom, resulting in complete loss of riparian vegetation.

Threats Under Forest Service Control

Land management can be summarized into the following key threats:

- Loss of seeps and springs/riparian habitat from diversion of stream flow, in-stream mining, and disturbances to riparian areas from feral livestock (burros and cattle).

In addition to the forestwide plan components for animals and plants and terrestrial ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-12 above.

- Watersheds
- Terrestrial Ecosystems and Vegetation (Special habitats, Sagebrush, Pinyon juniper)
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)
- Riparian Conservation Areas (Meadows; lakes and ponds; rivers and streams; seeps and springs)
- Rangeland Livestock Grazing

Loss of seeps and springs in desert riparian habitat is the primary risk factor affecting persistence of Inyo Mountains slender salamander and a number of ecosystem-level plan components mitigate this threat, within Forest Service authority. This is achieved primarily through desired conditions, standards, guidelines and objectives for watersheds and riparian conservation areas. In addition, plan components TERR-SH-DC 01-02 and TERR-SH-STD 01 ensure special habitat are maintained or improved, that refugia is provided for species with restricted distributions and that special habitat needs will be incorporated in project design and implementation. A desired condition for Conservation Watersheds (MA-CW-DC 02) mitigates key threats from disturbance events like wildfires, floods and landslides which can reduce hydrologic connectivity and eliminate spring habitat.

Species-specific desired conditions (SPEC-FW-DC 02-04) add additional emphasis and clarity by specifying that habitats for at-risk species support self-sustaining populations within the inherent capabilities of the plan area—that the ecosystems they depend upon will be resilient to uncharacteristic fire, climate change, and other stressors; conditions for species of conservation concern (including minimal impacts from diseases) will be improved; and the structure and function of the vegetation, aquatic and riparian system, and associated microclimate and smaller scale elements (like special features such as carbonate rock outcrops, fens, or pumice flats) exist in adequate quantities within the capability of the plan area to provide habitat and refugia for at-risk species with restricted distributions. Loss of spring habitat is the primary risk factor for salamander persistence, and guideline SPEC-FW-GDL 05 is particularly important because it constrains water developments (such as a diversion or well) near streams or seeps and springs where there is high risk of dewatering aquatic and riparian habitats where at-risk species occur. Desired conditions for conservation watersheds and riparian conservation areas (MA-CW-DC 01, 03; MA-RCA-DC 02) provide high-quality habitat and functionally intact ecosystems that

contribute to the persistence of species of conservation concern, and provide for breeding, dispersal, overwintering, and feeding habitats for at-risk species.

Threats Not Under Forest Service Control

- Water diversions and impoundments that occur outside the national forest boundary, growing water use demands.
- Mining operations including suction dredge that occur outside the national forest boundary.
- Loss of seeps, springs and riparian habitat due to drought and changes in precipitation patterns and snowpack-related to climate change.

The species inhabits limited, fragile spring systems isolated in one of the driest desert habitats in the country (Yanev and Wake 1981). Any impact that affects water supply or riparian values likely limits the amount of habitat available to the species that would possibly reduce population sizes. Climate change and changing precipitation patterns further exacerbate drought conditions and are key threats. While the Inyo National Forest cannot directly control climate change, ecosystem plan components as mentioned above provide conditions, which should be more resilient to ecosystem stressors and the interrelated effects of climate change.

Water resource management activities, including maintaining perennial water quality, quantity, and timing of flows play a critical role in overall ecological function and sustainability and most of these activities are regulated outside the national forest boundary. Multiple municipalities, including the Los Angeles Department of Water and Mammoth Community Water District conduct groundwater pumping near the Inyo, though wells from these two entities do not occur on National Forest System lands. Groundwater pumping affects groundwater-dependent ecosystems such as meadows, springs and seeps, although the extent of those influences on the national forest is not well documented.

Ecosystem-level plan components for Watersheds (WTR-FW-DC 01-04, 07 and WTR-FW-STD 01-03) provide for healthy riparian and aquatic ecosystems within management authority, but because of growing population demands and off-forest consumption of water resources, these habitats may not realize their full recovery potential; limiting the Inyo National Forest's ability to provide for species viability. Several goals, however, provide a vision for working across land boundaries to collectively attain desired conditions. A watershed goal (WTR-FW-GOAL 01) encourages collaborative work between adjacent land owners and agencies to improve watersheds across ownership boundaries while a goal for riparian conservation areas (MA-RCA-GOAL 01) promotes coordination with State fish and wildlife agencies to address native aquatic species issues, including evaluating management and monitoring needs to address aquatic species requirements across ownership boundaries. Finally, several goals for special habitats (TERR-SH-GOAL 01-02) promote cooperative partnerships to study, monitor and restore special habitats and to make sure they are accurately documented within the corporate geographic information system. These strategies, if implemented should collectively improve habitat for Inyo Mountains slender salamander across its range.

Summary

The Inyo Mountains slender salamander is a restricted endemic, limited to several isolated populations scattered throughout a small portion of the Inyo National Forest and the remaining population located outside of the plan area. While the ecological conditions the salamander depends on appear generally stable or are trending in a positive direction based on current management, there is still substantial concern for the species persistence in the plan area by

simple virtue of its rarity and uncertainty regarding climate change-related effects and losses in spring habitat. As a result of this rarity and its limited distribution in the plan area, this species is highly susceptible to events such as flash floods, and drying conditions that may become more frequent with climate change. The Inyo Mountains slender salamander's limited dispersal ability and isolated populations put it at further risk for localized extinctions from these types of events. Further, the watershed is not wholly contained within the national forest and the Inyo has little control over water management outside national forest boundaries. For this reason, it will be difficult for managers to fully restore habitat to reference conditions. Species viability of Inyo Mountains slender salamander on the Inyo National Forest is currently uncertain; however, proposed plan components are designed to move habitat conditions to a more desired ecological state than what currently exists. The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of Inyo Mountains slender salamander within its range. However, key risk factors including climate change, groundwater pumping, and water diversions that occur off national forest and are not within Forest Service management authority will continue to impact spring habitat making it difficult to maintain viability in the plan area.

Kern Plateau Salamander

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of the Kern Plateau Salamander in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Perennially wet and moist habitat, usually associated with rocky outcrops or rock substrate, along the eastern escarpment of the Sierra Nevada Mountains. Wet meadows surrounded by mixed conifer.

Table F-13 summarizes key threats, plan components, and expected effects on Kern Plateau salamander.

Information on Current Distribution of the Species in the Planning Unit

The Kern Plateau salamander has been detected at 36 sites, mainly from the Kern Plateau in the Sierra Nevada, but including a few isolated populations from the Owens Valley and the Scodie Mountains in eastern California (Wake, et al. 2002). It is abundant on the Kern Plateau especially in mesic areas, and found in nearly every drainage in the eastern Sierra from Walker Creek (east of Olancha) to Nine Mile Creek (Hansen and Wake 2005). Information on population status and trend is not available, but the species is considered to be common in most of its range and populations stable (Hansen and Wake 2005). It is currently unknown if a viable population exists on the Inyo National Forest.

Table F-13. Key threats, plan components and expected effects on Kern Plateau salamander

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Drying of microsite conditions that include permanent wet meadow habitat, springs and seeps (groundwater dependent ecosystems) with riparian vegetation and refugia substrate. Loss of habitat due to climate change related stochastic events (e.g. flooding, fire, and drought).	WTR-FW-DC 01-06 SPEC-FW-DC 01, 04 MA-RCA-DC 01-10 RCA-LPP-DC 01 RCA-MEAD-DC 01-07 RCA-RIV-DC 01-03,06 RCA-SPR-DC 01-03 TERR-SH-DC 01-02 MA-CW-DC 02 MA-RCA-OBJ 01 TERR-SH-STD 01 WTR-FW-STD 01-03 MA-RCA-DC 01-08, 10 MA-RCA-STD 01-02, 06, 09-10,12-13,17 TERR-RFIR-DC 01-07 TERR-LDGP-DC 01-10 TERR-JEFF-DC 07 RCA-MEAD-OBJ 01 DA-WILD-DC 02-03	SPEC-FW-DC 02,04	Ecosystem level plan components ensure healthy functioning watersheds will continue to supply ground water flow and recharge necessary to maintain spring habitat and that water diversions, within forest service management authority, do not co-occur in areas with salamanders. Forest-wide desired conditions for species ensure sustainable populations of animal species are supported by ecosystems that are resilient to fire, climate change and other stressors. Plan components for riparian and spring areas ensure healthy spring habitat is available for species to complete life cycle needs and that it will be resilient to climate change. Species specific plan components ensure ecological conditions improve conditions for species of conservation concern and that riparian systems contain the appropriate microclimates and small scale habitat elements to provide refugia for at-risk species. Plan components ensure healthy functioning watersheds will continue to supply ground water flow and recharge necessary to maintain spring habitat and that water diversions do not co-occur in areas with salamanders.

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Direct mortality due to water diversions that reduce and alter hydrology regimes, including, timber harvest near wet meadows and fire suppression actions (e.g. any activities that reduce hydrologic connectivity and allow for sediment deposition).	MA-RCA-OBJ 01 TERR-SH-STD 01 WTR-FW-STD 01-03 RANG-FW-DC 01-03 RANG-FW-STD 04,07 MA-RCA-DC 01-08, 10 MA-RCA-MEAD-OBJ 01 MA-RCA-STD 01-02, 04-06, 09-10,12-13,17 MA-RCA-GDL 01-04 FIRE-FW-GDL 04-06 RCA-RIV-DC 05 MA-CW-OBJ 03	SPEC-FW-DC 03 SPEC-FW-STD 01 SPEC-FW-GDL 05 MA-CW-DC 01, 03 WTR-FW-DC 07	Ecosystem level plan components maintain ecosystem integrity for fine-scale refugia habitat for endemic species like the salamander, will ensure forest activities maintain spring/seeps and also manage for and or remove livestock from riparian conservation areas as needed so that special aquatic features are in proper functioning condition, hydrological flow is maintained and sedimentation is minimized. Plan component minimize loss of habitat during fire suppression actions in aquatic habitats Species specific desired conditions ensure land management activities maintain or improve conditions for survival and reproduction of at risk species; that ecological conditions improve conditions for species of conservation concern and that riparian systems contain the appropriate microclimates and small scale habitat elements to provide refugia for at-risk species. A species-specific standard ensures project design incorporates the needs of at-risk species while a guideline constrains water developments that could dewater seeps and springs and diminish salamander habitat. Desired conditions for conservation watersheds promote high quality habitat for species of conservation concern and habitat for breeding, dispersal, overwintering, and feeding for at-risk species.
High endemism, limited ability to disperse, restricted distribution and localized extinctions.	TERR-SH-DC 01-02 TERR-SH-STD 01	SPEC-FW-DC 04	Ecosystem level plan components ensure special habitats are maintained or improved Species specific elements provide habitat refugia for at-risk species with restricted distributions.
Water diversions that occur off forest.	N/A	N/A	Not within Forest Service management authority

Key Ecological Conditions in Plan Area

Kern Plateau salamander occurs in perennially wet and moist habitat, usually associated with rocky outcrops or rock substrate, along the eastern escarpment of the Sierra Nevada Mountains. On the Inyo National Forest, these conditions can be found largely on the Kern Plateau. Within this area, the mixed conifer assessment type is most prevalent and includes various combinations of white fir, red fir, and one or more pine species, typically with a very sparse understory. The majority of the red fir type is located on the Kern Plateau and Reds Meadow Valley areas where a large proportion (80 percent) of the red fir forest type across the southern Sierras is within designated wilderness. This area is known for large, open meadows surrounded by forests of subalpine conifers, red fir, lodgepole pine, and pinyon-juniper. Several critical aquatic refuges at the southern portion of the national forest were previously identified by the Sierra Nevada Framework as providing habitat for Kern Plateau salamander. These include Olancha and Haiwee Canyon Critical Aquatic Refuges.

Springs occur in most assessment areas throughout the Inyo National Forest. However, it is unknown how many of those springs support meadow or nonmeadow riparian ecosystems. The Inyo has very limited information related to spring flow alterations over time. In some arid portions of the national forest, springs and streams emanating from them are the only water source, and therefore very important for those ecosystems. Seeps on the Inyo can be described as groundwater-dependent ecosystems and are supported by groundwater.

Key Threats to Persistence

Kern Plateau salamander occurs in areas of permanent or seasonal surface moisture. It is limited to forested high-altitude riparian habitat and has small isolated populations which makes it vulnerable to any changes to the habitat. Activities that limit microsite conditions such as road construction, timber harvesting, fire suppression, and habitat degradation through capping of springs or alterations of spring water or habitat can adversely affect the species. However, on the Inyo National Forest, much of the salamander habitat occurs in designated wilderness, in steep, rocky and inaccessible terrain, which may provide a natural buffer from human interactions and management activities. No threats to Kern Plateau salamander habitat were identified for the analysis of the 2009 Motorized Travel Management Project (USDA Forest Service 2009). Multiple municipalities, including the Los Angeles Department of Water Power and Mammoth Community Water District conduct groundwater pumping near the Inyo, though wells from these two entities do not occur on National Forest System lands. Groundwater pumping affects groundwater-dependent ecosystems such as meadows, springs and seeps, although the extent of those influences on the national forest is not well documented. Water diversions are not a threat on the Kern Plateau where the salamanders use a more general type of habitat influenced by snowmelt; however, in the Indian Wells/Owens Valley areas, environmental conditions are much more arid and water diversions from the occupied springs would likely reduce the extent of the wetted in-channel and riparian areas. Climate change has the potential to impact all populations if snowpack and runoff conditions are significantly altered. Reductions in snowpack could affect the Kern Plateau populations and changes in infiltration that reduce spring flow in the Scodie Mountains or Indian Wells/Owens Valleys would probably reduce the extent and/or duration of spring flow and riparian development. The climate change modeling completed by Wright, et al. (2013) indicated a slight reduction (up to 20 percent) in habitat suitability by the year 2050.

Threats Under Forest Service Control

Land management can be summarized into the following key threats:

- Loss of seeps, springs, and riparian habitat from diversion of stream flow, and related disturbances such as vegetation management activities and fire suppression.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-13 above.

- Watersheds
- Terrestrial Ecosystems and Vegetation (Special habitats, Lodgepole pine, Red fir, Mixed conifer)
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)
- Riparian Conservation Areas (Meadows; lakes and ponds; rivers and streams; seeps and springs)
- Fire

Loss of moist habitat and springs is a primary risk factor affecting persistence of Kern Plateau Salamander. A number of ecosystem-level plan components mitigate this threat, within Forest Service authority. This is achieved primarily through desired conditions, standards, guidelines and objectives for watersheds and riparian conservation areas. In addition, plan components TERR-SH-DC 01-02 and TERR-SH-STD 01 ensure special habitat are maintained or improved, that refugia is provided for species with restricted distributions and that special habitat needs will be incorporated in project design and implementation. A desired condition for Conservation Watersheds (MA-CW-DC 02) mitigates key threats from disturbance events like wildfires, floods, and landslides, which can reduce hydrologic connectivity and eliminate spring habitat.

While loss of meadow riparian habitat is mitigated by a number of ecosystem-level plan components, several species-specific plan components provide additional clarity and emphasis. For example, WTR-FW-DC 05, 07 provides direction for maintaining habitat for at-risk species where stream diversions or other flow modifications are not regulated by the Federal Energy Regulatory Commission. SPEC-FW-GDL 05 ensures water developments (such as a diversion or well) should be avoided near streams or seeps and springs where there is high risk of dewatering aquatic and riparian habitats where at-risk species occur. Desired conditions for conservation watersheds and riparian conservation areas (MA-CW-DC 01, 03; MA-RCA-DC 02) provide high-quality habitat and functionally intact ecosystems that contribute to the persistence of species of conservation concern.

Threats Not Under Forest Service Control

- Water diversions and impoundments that occur outside the national forest boundary, growing water use demands.
- Loss of seeps, springs, and riparian habitat due to drought, and changes in precipitation patterns and snowpack related to climate change.

Water resource management activities, including maintaining perennial water quality, quantity, and timing of flows play a critical role in overall ecological function and sustainability of groundwater-dependent ecosystems and most of these activities are regulated outside the national forest boundary. Ecosystem-level plan components for Watersheds (WTR-FW-DC 01-04, 07 and WTR-FW-STD 01-03) provide for healthy riparian and aquatic ecosystems within management authority, but because of growing population demands and off-forest consumption of water resources, these habitats may not realize their full recovery potential, limiting the Inyo National Forest's ability to provide for species viability. Several goals, however, provide a vision for

working across land boundaries to collectively attain desired conditions. A watershed goal (WTR-FW-GOAL 01) encourages collaborative work between adjacent land owners and agencies to improve watersheds across ownership boundaries while a goal for riparian conservation areas (MA-RCA-GOAL 01) promotes coordination with State fish and wildlife agencies to address native aquatic species issues, including evaluating management and monitoring needs to address aquatic species requirements across ownership boundaries. Finally, several goals for special habitats promote (TERR-SH-GOAL 01-02) promote cooperative partnerships to study, monitor and restore special habitats and to makes sure they are accurately documented within the corporate geographic information system.

These strategies should collectively improve habitat for Kern Plateau salamander; although climate change effects coupled with prolonged drought could be an additive risk factor by eliminating the moist microsite conditions needed by salamanders.

Summary

Although this salamander is largely restricted to the Kern Plateau and western portions of Owens Valley, it appears to be well distributed throughout its range. Most populations are not imperiled by ongoing threats or known to be declining. However, habitat on the Inyo National Forest may be naturally limited and increased wildland fire events coupled with subsequent flash-floods that scour habitat are potential risk factors. Springs are sensitive water features due to their relative rarity, their small area, and their ecological importance relative to their size. Any activities that disrupt water flow puts spring ecosystems at risk. In addition, persistence of the salamander populations may be closely tied to climate variations that affect their habitat, especially if they experience extreme drying trends, or stochastic events such as flash floods. Given its endemism, restricted range and susceptibility to these environmental events, there is substantial concern for this species' ability to persist in the plan area. The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of Kern Plateau Salamander within its range. However, key risk factors including climate change, groundwater pumping and water diversions that occur outside the national forest that are not within Forest Service management authority will continue to impact spring habitat making it difficult to maintain viability in the plan area.

California Golden Trout

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of the California Golden Trout in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Rivers and large streams with cold, clean water and where pooling habitat/undercut banks and emergent vegetation is present.

Table F-14 summarizes key threats, plan components, and expected effects on California golden trout.

Table F-14. Key threats, plan components and expected effects on California Golden Trout

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Human-caused activities include eutrophication due to agricultural runoff and urbanization, sedimentation that smothers pooling habitat and undercut banks. Water diversions that reduce and alter instream flow hydrology regimes, mining, including suction dredge operations. This also includes grazing and water impoundments that reduce current velocities and allow for sediment deposition.	WTR-FW-DC 01-07 WTR-FW-STD 01-03 SPEC-FW-STD 01 SPEC-FW-GDL 05 RANG-FW-GOAL 03 RANG-FW-STD 07 MA-RCA-DC 10 MA-RCA-STD 02, 03, 06-15, 17-18 MA-RCA-GDL 01-03	SPEC-GT-STD MA-RCA-DC 11	Plan components provide direction to maintain adequate water quality and availability—supports ecosystem integrity and resilience and maintains ecosystem conditions needed for life cycle. Plan components also include direction to minimize the impacts of water diversions that reduce water quantity and quality due to management activities.
Introduction of exotic species (non-native trout).	INV-FW-DC 01-02 INV-FW-GOAL 01 & 03 INV-FW-STD 01 MA-RCA-GOAL 01 & 02 INV-FW-GOAL 01 & 03	N/A	Plan components address the issue of exotic species and direction to manage and prevent exotics.
Climate change and changes in stream temperatures due to management activities. Loss of quality habitat due to land management activities that degrade or eliminate habitat.	MA-RCA-DC 10 &11 MA-RCA-STD 01, 04, 05, 07,10-15, 17-18 MA-RCA-GDL 01-03 INV-FW-GOAL 03 RCA-RIV-DC 01-06 RCA-RIV-OBJ 01-02 MA-CW-DC 01-03 MA-CW-OBJ 03 MA-CW-GDL 01-03	SPEC-GT-STD MA-RCA-DC 01-11 MA-RCA-GDL 05, 07	Plan components provide for ecological integrity of aquatic systems so that they are resilient to climate change and other demands, necessary for providing adequate stream habitat.

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
General population loss/collapse Hybridization/Competition	SPEC-FW-DC 01-04 SPEC-FW-GOAL 03, 04 SPEC-FW-GDL 03 MA-RCA-DC 01-08 & 11 MA-RCA-GOAL 01 & 02	SPEC-GT-GOAL MA-RCA-DC 11 MA-RCA-GDL 05, 07	Plan components ensure that management activities promote ecological conditions that support the habitat components necessary to sustain healthy, functioning population levels within the inherent capability of the landscape. Plan components provide direction to work with Federal, State and Tribes and other agencies to collaborate on restoring and maintaining at risk species and their habitat.

Information on Current Distribution of the Species in the Planning Unit

California golden trout are endemic to the South Fork of the Kern River and Golden Trout Creek both located in an area referred to as the Kern Plateau in the Golden Trout Wilderness. A hatchery exists in the Cottonwood Lakes drainage which is used to transplant the golden trout into other lakes within the Sierra Nevada Mountains. According to the NRIS aquatic survey database, golden trout are distributed across all four ranger districts on the Inyo National Forest. They occupy all historic habitat within Golden Trout Creek (which is also a critical aquatic refuge (CAR)) but only occupy about 25 percent of their historic habitat within the South Fork of the Kern River. There is also a population in Mulkey Creek that was transplanted above a natural barrier. Total population size has likely decreased from reference conditions in concordance with decrease in occupied habitat.

Populations of golden trout within Mulkey Meadow indicate densities of fish from three different sections to be relatively high, between 5,336 and 5,667 fish per mile (CDFG 2008). Populations in California golden trout were estimated at 10.39 fish per mile, Siberian Creek estimated at 5,650 per mile and Stokes Stringer estimated at 3,488 per square mile. Populations appear to fluctuate due to width of the stream and quality of habitat. Other estimates from DFW in 1987 and 1988 for population estimates in Templeton and Ramshaw meadows indicated population numbers ranged from 3,278 to 7,332 fish per mile. Further data would need to be collected to correlate stream size (width), habitat condition and annual climate conditions to equalize population estimates with current Forest management and have a better understanding of trends.

Key Ecological Conditions in Plan Area

Key ecological conditions for California golden trout include sufficient water quality (cold water less than 24 degrees Celsius, with pooling habitat, undercut banks and emergent vegetation) and quantity. On the Inyo National Forest, these conditions can be found primarily found in the Golden Trout Wilderness (196,630 acres) on the southernmost portion of the Inyo which is known for large, open meadows surrounded by forests of subalpine conifers, red fir, lodgepole pine, and pinyon-juniper.

All perennial flowing stream reaches within the plan area on the Kern Plateau provide physically suitable habitat for California golden trout. This includes approximately 85,000 acres of land, to include approximately 49 miles of reliable perennial stream, within the South Fork Kern River watershed and 35,000 acres (39 miles of stream) within the Golden Trout Creek watershed.

The North Fork Kern River and South Fork Kern River have been designated as wild and scenic rivers and the Inyo National Forest portion is a ¼-mile-wide corridor on the east side of the river approximately 11.5 miles long. The portion administered by the Inyo National Forest is located within the Golden Trout Wilderness

The Kern Allotment group occurs within the southern portion of the Inyo National Forest within the Sierra Nevada mountain range. Except for a small portion on the Monache Allotment (Monache Meadow), all four allotments in this group occur within the Golden Trout Wilderness.

Key Threats to Persistence

Hybridization and competition with rainbow and brown trout in the South Fork of Kern River is a persistent threat in addition to high levels of endemism which put them at greater risk from events such as flooding, wildfire, and drought. Hybridization has already occurred to some degree in a majority of golden trout populations, but is kept in check by existing barriers. Additional

hybridization may occur within fragmented habitats as pure individuals mate with hybrids, but the degree to which this occurs is unknown. Brown trout prey extensively on golden trout below Templeton Barrier which may result in a severe decline of golden trout in this reach.

Overfishing and heavy grazing were primary stressors in the 19th and first half of the 20th century; however, current cattle management on the Inyo focuses on restoring the hydrologic and vegetative function of meadows in golden trout habitat. Fishing opportunities and recreation uses are expected to continue and impacts from those activities will continue to occur. Angling opportunities on the national forest include the chance to catch California Golden Trout in their native habitat of the South Fork Kern River and Golden Trout Creek. A hatchery exists in the Cottonwood Lakes drainage, which is used to transplant golden trout into other lakes within the Sierra Nevada Mountains and the California Department of Fish and Wildlife is expected to continue this fish stocking program.

It is important to note that these potential threats are all addressed by the Conservation Assessment and Strategy for the California Golden Trout (Stephens et al 2004). Additionally, a Comprehensive Management Plan for the North Fork and South Fork of the Kern Wild and Scenic River was completed in September, 1994 (USDA Forest Service 1994) and provides overall management direction for the wild and scenic river segments.

Threats Under Forest Service Control

- Any activities that alter water flow and hydrologic regime (grazing and water impoundments).
- Loss or degradation of habitat due to land management activities within the national forest boundary.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-14 above.

- Watersheds
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)
- Riparian Conservation Areas (Rivers and streams)
- Rangeland Livestock Grazing
- Invasive Species
- Components for Animal and Plant Species

Threats Not Under Forest Service Control

- Any activities that alter water flow and hydrologic regime (grazing and water impoundments) that occur outside the national forest boundary, along with growing water use demands.
- Loss or degradation of habitat due to drought, flash floods and changes in precipitation patterns and snowpack related to climate change.
- General population loss/collapse
- Hybridization with non-natives

Summary

The California golden trout is an endemic fish species, limited to a small portion of suitable habitat on the Inyo National Forest. While the ecological conditions that the trout depends on appear generally stable or are trending in a positive direction based on current management, there is still substantial concern for the species persistence by simple virtue of its rarity coupled with the potential for genetic introgression and competition from nonnative fish species. Uncertainty with regard to climate change-related effects poses an additional longer term threat. As a result of its rarity and limited distribution, this species is highly susceptible to unpredictable events and drying conditions that may result from increasing temperatures and other climate change-related disturbance in the future. Its isolated populations put it at further risk for localized extinctions.

The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of California golden trout within its range. However, due to uncertainty about the species' current viability, the potential for hybridization with nonnatives, general population loss or collapse, the limited amount of habitat on the Inyo National Forest, and potential future threats associated with climate change and ground water use, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of California Golden Trout within the plan area.

Sierra Sulphur

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of Sierra sulphur in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: High elevation, perennially wet marshes and wet meadows near springs, seeps and riparian areas where host plant *Vaccinium cespitosum* occurs.

Table F-15 summarizes key threats, plan components, and expected effects on Sierra sulphur.

Information on Current Distribution of the Species in the Planning Unit

The Sierra sulphur is a high-elevation meadow species of butterfly that is endemic to the Sierra Nevada of California. It occurs mainly in meadows over 9,000 feet in elevation (Schoville et al. 2011, Schoville et al. 2012). The range of the Sierra sulphur is restricted to the following counties in California from the north to the south: Tuolumne, Mono, Mariposa, Madera, Fresno, Inyo, and Tulare (Schoville et al. 2011).

This species is found on the Inyo National Forest, although records are limited to three observations. The northern portion of the range (Mariposa, Mono and Tuolumne counties) appear to be genetically different than the southern portion of the range. For the Inyo National Forest, there appears to be a congregation near Mono Lake and one to the south in Inyo and Tulare counties. Based on an average dispersal distance of 1.2 kilometers, it is highly unlikely that these two populations interact with one another.

Table F-15. Key threats, plan components and expected effects on Sierra sulphur

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Drying of microsite conditions that include permanent wet meadow habitat, springs and seeps (groundwater dependent ecosystems) with riparian vegetation, refugia substrate and host plant species. Loss of habitat due to climate change or other stochastic events. Loss of habitat due to invasive plant species outcompeting native host plants.	WTR-FW-DC 01-03 TERR-SH-DC 01-03 TERR-SH-GOAL 01 & 02 INV-FW-DC 01 & 02 INV-FW-GOAL 01-04 INV-FW-STD 01-03 INV-FW-GDL 01-05 MA-RCA-DC 01-07 MA-RCA-GOAL 02 MA-RCA-STD 06, 08, 09 & 11 RCA-MEAD-DC 01-08 RCA-RIV-DC 01-06 RCA-LPP-DC 01 RCA-SPR-DC 01-03	MA-CW-DC 01-03 TERR-SH-DC 02, 03	Plan components ensure healthy functioning watersheds will continue to supply ground water flow and recharge necessary to maintain habitat. Plan components ensure healthy habitat is available for species to complete life cycle needs and will be resilient to climate change.
Direct mortality due to activities that cause a loss of habitat or loss of host plant species, including timber harvest near wet meadows and activities that reduce water in wet meadow habitat or riparian areas. This includes grazing and water impoundments that reduce current velocities and allow for sediment deposition or loss of springs and seeps from historic livestock and wild horse grazing.	WTR-FW-STD 01-04 TERR-SH-STD 01 SPEC-FW-DC 01-04 REC-FW-GDL 01 & 03 RANG-FW-GOAL 03 MA-RCA-DC 04-08, 10 MA-RCA-STD 1-15, 17 & 18 MA-RCA-GDL 01-04, RCA-MEAD-OBJ 01	SPEC-FW-DC 01-04 SPEC-FW-GOAL 01-04 SPEC-FW-STD 01 SPEC-FW-GDL 04 & 05	Plan components maintain ecosystem integrity for fine-scale refugia habitat for this species, will ensure forest activities maintain wet meadow habitat, spring/seeps/marshes and also manage for and or remove livestock from riparian conservation areas as needed so that special aquatic and terrestrial features are in proper functioning condition.

Key Ecological Conditions in Plan Area

The Sierra sulphur is a species endemic to high-elevation wet meadows where *Vaccinium cespitosum* occurs. In addition, this species is dependent upon meadows with unimpaired hydrology; therefore, any factors that result in a lower water table could affect the habitat elements the species relies upon, especially the larval host plant dwarf bilberry (*Vaccinium cespitosum)* and nectaring plants.

Key Threats to Persistence

Threats include drying of microsite conditions, conifer encroachment on meadow habitat, loss of habitat due to human activities, direct mortality due to loss of host plant availability and climate change.

Numerous meadows in the high Sierra have been degraded in the past from a variety of causes including logging, overgrazing, and railroad and road construction (Loheide and Gorelick 2007, Viers et al. 2013). In many cases, the streams in degraded meadows have incised within the meadow and have associated poor streambank stability, headcuts, lack of riparian vegetation, and other factors that make them vulnerable to further degradation. Within the range of the Sierra sulphur, logging and road construction (including railroads) are no longer occurring and grazing is very limited within the range of the species. In meadows with unstable stream channels, poorly managed livestock grazing (overgrazing) has the potential to further degrade the meadow by maintaining streambank instability, thereby making the meadow vulnerable to continued incision and disassociation with the floodplain (Loheide and Gorelick 2007). Livestock browsing on and trampling dwarf bilberry could inadvertently remove individuals from colonized plants and reduce the amount of vegetation available to caterpillars of C. *behrii*.

Conifer encroachment into meadows and climate change are two other threats to the habitats the Sulphur relies upon (Scheingross 2007). Conifer encroachment has been observed in several high-elevation mountainous meadow situations and may be attributed to climatic changes, fire suppression, or grazing (Rochefort et al. 1994, Millar et al. 2004, Halpern et al. 2010). In wet meadows, conditions are generally unfavorable for conifer establishment primarily due to intense competition from obligate meadow species, but as high elevation meadows become drier (for example, periods of drought or lowered water table) and temperatures increase, they become more suitable for conifer encroachment and meadow loss (Millar et al. 2004, Viers et al. 2013). Since the largest populations of the Sierra sulphur are associated with large meadows (and smaller populations in smaller meadows (Schoville 2017)), meadow loss is a threat to the species.

Climate change is potentially the greatest threat to the continued persistence of the Sierra sulphur according to NatureServe. The species is already restricted to the highest elevation meadows in the Sierra Nevada and has a limited amount of upward elevational relief available to use if lower elevation sites become unsuitable through climate change impacts. Potential effects include reduced snowpack, earlier melting of snowpack, greater variability in precipitation, and warmer temperatures (Null et al. 2010, Viers et al. 2013). The amount and persistence of snowpack are important variables in maintaining high water tables and wet meadow conditions. The Sierra sulphur is dependent upon meadows with unimpaired hydrology; therefore, any factors that result in a lower water table could affect the habitat elements the species relies upon, especially the larval host plant (dwarf bilberry) and nectaring plants. Dwarf bilberry growing in drier or degraded meadows may not provide the high quality larval food resource that bilberry growing in wet habitats does (Schoville 2017). Specific to the Sierra sulphur, Scheingross (2007) used BIOCLIM and MAXENT models to predict the range of *C. behrii* based on climate change predictions. The modeling predicted a contraction of range, with most of the suitable habitat remaining in the higher, southern portion of the species' range (Scheingross 2007).

Threats Under Forest Service Control

- Any activities that alter water flow and hydrologic regime (grazing and water impoundments).
- Loss or degradation of habitat due to land management activities within the national forest boundary.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-15 above.

- Watersheds
- Terrestrial Ecosystems and Vegetation (Special Habitats)
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)
- Riparian Conservation Areas (Meadows; lakes and ponds; rivers and streams; seeps and springs)
- Rangeland Livestock Grazing
- Invasive Species
- Components for Animal and Plant Species

Threats Not Under Forest Service Control

- Any activities that alter water flow and hydrologic regime of habitat (grazing and water impoundments) and occur outside the national forest boundary, along with growing water use demands.
- Loss or degradation of habitat due to drought and changes in precipitation patterns and snowpack related to climate change.
- Invasive plant species outcompeting host plant species.

Summary

The Sierra sulphur is a species endemic to high elevation wet meadows where *Vaccinium cespitosum* occurs. In addition, this species is dependent upon meadows with unimpaired hydrology; therefore, any factors that result in a lower water table could affect the habitat elements the species relies upon, especially the larval host plant dwarf bilberry (*Vaccinium cespitosum)* and nectaring plants. This butterfly relies on the dwarf bilberry for larval foraging with the highest quality forage provided by early plant growth from plants growing in wet sites. Dispersal between sites is limited by the distance that adults travel, especially in their alpine environment where numerous barriers to dispersal occur. Some large populations occur; however, many of the southern and lower elevation occurrences have lower population sizes. There also appears to be a dispersal barrier connecting northern and southern populations that will influence gene flow among populations within the range of the species.

Climate change may be the primary impact on the habitat of this species. Any changes in water availability or bloom of the host plant may be restricting the species survival rate. Already restricted to the highest elevation meadows in the Sierra Nevada, there is a limited amount of upward elevational relief available to utilize if lower elevation sites become unsuitable. In addition, water withdrawal or modification and grazing could potentially impact this species habitat.

The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of Sierra sulphur within its range. However,

due to uncertainty about the species current viability, the potential for habitat loss/degradation, general population loss or collapse due to direct mortality, the limited amount of habitat and potential for host species plant species on the Inyo National Forest, and potential future threats associated with climate change, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of Sierra sulphur within the plan area.

Square Dotted Blue Butterfly

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of square dotted blue butterfly in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: High elevation, scree slopes, barren ridges and pumice fields where host plant *Eriogonum* species (buckwheat plants) occur.

Table F-16 summarizes key threats, plan components, and expected effects on square dotted blue butterfly.

Table F-16. Key threats, plan components and expected effects on square dotted blue butterfly

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of microsite conditions that include meadow habitat with buckwheat host plant species present due to climate change or other stochastic events. Loss of habitat due to invasive plant species outcompeting native host plants.	WTR-FW-DC 04 TERR-FW-DC 01-05 TERR-SH-GOAL 01 & 02 SPEC-FW-DC 01, 02 & 04 INV-FW-DC 01 & 02 INV-FW-GOAL 03 INV-FW-STD 02 INV-FW-GDL 01-05 RCA-MEAD-DC 01-08	TERR-FW-DC 06 TERR-SH-DC 02, 03 TERR-SAGE-DC 01, 04 & 05 TERR-PINY-DC 01, 03 & 04 TERR-XER-DC 01	Plan components ensure healthy habitat is available for species to complete life cycle needs and will be resilient to climate change.
Direct mortality due to activities that cause a loss of habitat or loss of host plant species, including pumice harvest, other mining activities and off-highway vehicle use.	TERR-SH-DC 01 TERR-SH-STD 01 SPEC-FW-DC 03 SPEC-FW-GOAL 01-04 SPEC-FW-STD 01 SPEC-FW-GDL 04 INV-FW-GOAL 01-04 INV-FW-GDL 01-05 REC-FW-GDL 01 & 03 RCA-MEAD-OBJ 01	TERR-SAGE-DC 02 & 03 TERR-XER-DC 02 TERR-XER-STD 01 TERR-XER-GDL 01	Plan components maintain ecosystem integrity for fine-scale refugia habitat for this species, will ensure forest activities maintain open habitat where host plant and ant species occur. Plan components provide direction to maintain preferred habitat.

Information on Current Distribution of the Species in the Planning Unit

The species has a spotty distribution from Washington south to Baja California Norte, thence west to southern Colorado and New Mexico. However, this subspecies is found at Badger Flat in Inyo Mountains (Davenport 2016) ranging from 8,000 to 13,000 feet on scree slopes, barren ridges, and pumice fields. Geographically close to *Euphilotes battoides hadrochilus* but phenotypically are strikingly different.

Key Ecological Conditions in Plan Area

Key ecological conditions include the food plant *Eriogonum umbelatum subaridum* and the subspecies is univoltine and flies during July (Davenport et. al. 2006). Caterpillar plant host may be various wild buckwheats (*Eriogonum* species) including coastal buckwheat and sulphur-flower. The larvae feed on the flowers and fruits of *Eriogonum* species. The larvae are tended by ants. The species overwinters in its chrysalids in sand or leaf litter. Scree slopes, barren ridges and pumice fields appear to be preferred habitat (Davenport 2016).

Key Threats to Persistence

Threats include loss of microsite conditions, loss of habitat due to human activities, direct mortality due to loss of host plant availability and climate change.

Threats Under Forest Service Control

- Loss or degradation of habitat due to land management activities within the national forest boundary.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-16 above.

- Watersheds
- Terrestrial Ecosystems and Vegetation (Special Habitats, Sage, Xeric, Pinyon)
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)
- Riparian Conservation Areas (Meadows)
- Rangeland Livestock Grazing
- Invasive Species
- Recreation
- Components for Animal and Plant Species

Threats Not Under Forest Service Control

- Any activities that alter habitat and occur outside the national forest boundary.
- Loss or degradation of habitat due to drought and changes in precipitation patterns and snowpack related to climate change.
- Invasive plant species outcompeting host plant species.

Summary

The species is known from only one location on the Inyo National Forest. Any modification to the area that could impact the host plant, the ants, or individuals would have a deleterious effect on

the species. Climate change could shift the species range up elevation with would eliminate the host plant, the ant, or the butterfly.

Impacts to the square dotted blue butterfly may arise from human-caused activities that include the use of pesticides and herbicides treating undesirable species and noxious weeds. Off-highway vehicles may enter into this area as there are 4-wheel drive trails in and adjacent to Badger Flats and Mazourka Peak. At the top of Mazourka Peak, there is a radio facility. In addition, numerous mines are in its vicinity. Potential of harvesting pumice is of concern if any modification to the host plant or the ants would be at risk.

The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of square dotted blue butterfly within its range. However, due to uncertainty about the species' current viability, the potential for habitat loss and degradation, general population loss or collapse due to direct mortality, the limited amount of habitat and potential for host species plant species on the Inyo National Forest, and potential future threats associated with climate change, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of square dotted blue butterfly within the plan area.

Mono Lake Checkerspot Butterfly

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of Mono Lake checkerspot butterfly in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Perennially wet marshes and wet meadows near springs, seeps and riparian areas where host plant, *Collinsia parviflor*a, may occur.

Table F-17 summarizes key threats, plan components, and expected effects on Mono Lake checkerspot butterfly.

Information on Current Distribution of the Species in the Planning Unit

Edith's checkerspot, *Euphydryas editha* is a highly variable species occurring across the western United States, with at least 12 subspecies recognized in California (Crabtree 1998). Populations of subspecies are highly localized and adult butterflies do not disperse much beyond the localized habitats where their larval food plants occur (Baughman and Murphy 1998). Generally, this species is known to occur in wet meadows and pine forests on the east slope of the Sierra Nevada Mountains in Alpine and Mono Counties. Mono Lake Checkerspot occur in scattered colonies on the east side of the Sierras in Great Basin Scrub habitat, from east below Sonora Pass to Big Pine Creek Canyon.

Table F-17. Key threats, plan components and expected effects on Mono Lake checkerspot butterfly

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Drying of microsite conditions that include permanent wet meadow habitat, springs and seeps (groundwater dependent ecosystems) with riparian vegetation, refugia substrate and host plant species. Loss of habitat due to climate change or other stochastic events. Loss of habitat due to invasive plant species outcompeting native host plants.	WTR-FW-DC 01-03 TERR-SH-DC 01-03 TERR-SH-GOAL 01 & 02 INV-FW-DC 01 & 02 INV-FW-GOAL 01-04 INV-FW-STD 01-03 INV-FW-GDL 01-05 MA-RCA-DC 01-07 MA-RCA-GOAL 02 MA-RCA-STD 06, 08, 09 & 11 RCA-MEAD-DC 01-08 RCA-RIV-DC 01-07 RCA-LPP-DC 01 RCA-SPR-DC 01-03	MA-CW-DC 01-03 TERR-SH-DC 02 & 03	Plan components ensure healthy functioning watersheds will continue to supply ground water flow and recharge necessary to maintain habitat. Plan components ensure healthy habitat is available for species to complete life cycle needs and will be resilient to climate change.
Direct mortality due to activities that cause a loss of habitat or loss of host plant species, including timber harvest near wet meadows and activities that reduce water in wet meadow habitat or riparian areas. This includes grazing and water impoundments that reduce current velocities and allow for sediment deposition or loss of springs and seeps from historic livestock and wild horse grazing.	WTR-FW-STD 01-04 TERR-SH-STD 01SPEC-FW-DC 01-04 REC-FW-GDL 01 & 03 RANG-FW-GOAL 03 MA-RCA-DC 04-08, 10 MA-RCA-STD 1-15, 17 & 18 MA-RCA-GDL 01-04, RCA-MEAD-OBJ 01	SPEC-FW-DC 01-04 SPEC-FW-GOAL 01-04 SPEC-FW-STD 01 SPEC-FW-GDL 04 & 05	Plan components maintain ecosystem integrity for fine-scale refugia habitat for this species, will ensure forest activities maintain wet meadow habitat, spring/seeps/marshes and also manage for and or remove livestock from riparian conservation areas as needed so that special aquatic and terrestrial features are in proper functioning condition.

Mono Lake checkerspot was previously described as having potentially been extirpated. Dr. Kenneth Davenport provided updated information about his collection of 20 specimens from 1979 to 2014, many of which came from the Inyo National Forest, but the exact number is unknown (Davenport 2016, pers. comm). One record also exists on the Inyo and is documented in Butterflies and Moths of North America (www.butterfliesandmoths.org/sighting_details/476786); however, no photograph was included with the record. The range extent is from eastern slope of Sierra Nevada, from Bishop, CA to Schneider Meadow, near Carson City, NV; from pinon-juniper woodland, meadows, mountain slopes; host may be *Collinsia parviflora* based on association of adults.

Key Ecological Conditions in Plan Area

Generally, this species is known to occur in perennially wet marshes, wet meadows near springs, seeps and riparian areas where host plant occurs. Host plant may be *Collinsia parvifloria* based on association of adults (NatureServe 2017).

Key Threats to Persistence

Key threats include drying of microsite conditions, loss of habitat due to human activities or climate change and direct mortality due to loss of host plant availability. Threats may also arise from human-caused activities that include the use of pesticides treating invasive species.

Threats Under Forest Service Control

- Any activities that alter water flow and hydrologic regime of microsite conditions (grazing and water impoundments).
- Loss or degradation of habitat due to land management activities within the national forest boundary.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-17 above.

- Watersheds
- Terrestrial Ecosystems and Vegetation (Special Habitats)
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)
- Riparian Conservation Areas (Meadows; lakes and ponds; rivers and streams; seeps and springs)
- Rangeland Livestock Grazing
- Invasive Species
- Components for Animal and Plant Species

Threats Not Under Forest Service Control

- Any activities that alter water flow and hydrologic regime of habitat (grazing and water impoundments) and occur outside the national forest boundary, along with growing water use demands.
- Loss or degradation of habitat due to drought and changes in precipitation patterns and snowpack related to climate change.
- Invasive plant species outcompeting host plant species.

Summary

Mono Lake checkerspot is an endemic butterfly that ranges from Sonora Pass to Mono Lake. Species have been recently documented on the Inyo National Forest, were a portion of the population was once thought extinct at Mono Lake. Impacts to the Mono Lake checkerspot may arise from human-caused activities that include the use of pesticides to treat invasive species. Habitat loss due to conifer encroachment on meadows and habitat loss due to climate change could also impact this species.

The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for

persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of Mono Lake checkerspot within its range. However, due to uncertainty about the species current viability, general population loss or collapse, the limited amount of habitat on the Inyo National Forest, and potential future threats associated with climate change, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of Mono Lake checkerspot within the plan area.

Boisduval's Blue Butterfly

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of Boisduval's blue butterfly (*Plebejus icarioides)* in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Forest clearings and edges, prairies, sagebrush, chaparral, coastal dunes and open fields, where host plant species occur (lupine, pussy paws, buckwheat and other composites).

Table F-18 summarizes key threats, plan components, and expected effects on Boisduval's blue butterfly.

Information on Current Distribution of the Species in the Planning Unit

Boisduval's blue butterfly has a wide distribution with occurrences from British Columbia east to the western edge of the Great Plains, south to New Mexico, Arizona, southern California, and Baja California. Generally, this species is found in forest clearings and edges, prairie, sagebrush, chaparral, coastal dunes, fields.

Many of the subspecies of Boisduval's blue butterfly are rare to their known locality and do separate by species even at a puddle (Shapiro 2017). From Shapiro (2017), Boisduval's blue butterfly has one brood, from April-June at Gates Canyon, and from June-August (rarely later) at higher elevations. Their host plants are many species of perennial lupines, but tend to have the preferred species varying by locality. Adults visit a great variety of flowers, including pink pussy paws, wild buckwheats, composites, and the like. In Sierra Valley they can often be found with the host plant far out in sagebrush steppe, where nothing (or nothing but lupine, which they do not use as a nectar source) seems to be in bloom.

Very little is known about subspecies *Plebejus icarioides inyo*. They are considered widespread in the Inyo Mountains. Annual surveys from 2005 to 2012 have a total of 1,145 recorded detections of this species throughout the Inyo Mountains (Schlick 2015). Sightings of Boisduval's blue in the Inyo Mountains occur all the way to 2016 in the Biodiversity Information Serving Our Nation (BISON) database. The Inyo Mountains are the only known location for this subspecies.

Table F-18. Key threats, plan components and expected effects on Boisduval's blue butterfly

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of habitat due to climate change or other stochastic events. Loss of habitat due to invasive plant species outcompeting native host plants.	WTR-FW-DC 04 TERR-FW-DC 01-05 TERR-SH-GOAL 01 & 02 SPEC-FW-DC 01, 02 & 04 INV-FW-DC 01 & 02 INV-FW-GOAL 04 INV-FW-STD 02 RCA-MEAD-DC 01-08	TERR-FW-DC 06 TERR-SH-DC 02, 03 TERR-SAGE-DC 01, 04, 05 TERR-PINY-DC 01, 03, 04 TERR-XER-DC 01	Plan components ensure healthy functioning watersheds will continue to supply ground water flow and recharge necessary to maintain habitat. Plan components ensure healthy habitat is available for species to complete life cycle needs and will be resilient to climate change.
Direct mortality due to activities that cause a loss of habitat or loss of host plant species. This includes herbicide use, pesticide use, timber harvest, grazing and water impoundments from historic livestock and wild horse grazing that cause direct habitat loss or harm individuals. Recreation use may pose a threat to a loss of habitat or harm to individuals.	TERR-SH-DC 01 TERR-SH-STD 01 SPEC-FW-DC 03 SPEC-FW-GOAL 01-04 SPEC-FW-STD 01 SPEC-FW-GDL 04 INV-FW-GOAL 01 & 02 INV-FW-GDL 01-05 REC-FW-GDL 01 & 03 RCA-MEAD-OBJ 01	TERR-SAGE-DC 02 & 03 TERR-XER-DC 02 TERR-XER-STD 01 TERR-XER-GDL 01	Plan components maintain ecosystem integrity for fine-scale refugia habitat for this species, will ensure forest activities maintain open habitat where lupine occurs. Plan components provide direction to maintain preferred habitat. Remove livestock from areas where there is a risk of losing habitat where lupine occurs.

Key Ecological Conditions in Plan Area

The species only occurs in the Inyo Mountains, in forest clearings and edges, prairies, sagebrush, chaparral, coastal dunes and open fields, where host plant species occur (lupine, pussy paws, buckwheat and other composites). Although the species is wide ranging, most of the subspecies are specific to localized areas.

Key Threats to Persistence

Key threats include drying of microsite conditions, loss of habitat due to human activities, climate change and direct mortality due to loss of host plant availability. In addition, invasive plant species such as cheatgrass may threaten an unknown proportion of the population, especially in areas where cheatgrass limits the establishment and persistence of native plant species. Any use of pesticides to remove invasive species could inadvertently impact the lupine or other nectar plant species. Other activities that could bisect or remove area suitable habitat include recreation development, mining, and road building.

Threats Under Forest Service Control

- Loss or degradation of habitat due to land management activities within the national forest boundary.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-18 above.

- Watersheds
- Terrestrial Ecosystems and Vegetation (Special Habitats, Sage, Xeric, Pinyon)
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)
- Riparian Conservation Areas (Meadows)
- Rangeland Livestock Grazing
- Invasive Species
- Recreation
- Components for Animal and Plant Species

Threats Not Under Forest Service Control

- Any activities that alter habitat and occur outside the national forest boundary.
- Loss or degradation of habitat due to drought and changes in precipitation patterns and snowpack related to climate change.
- Invasive plant species outcompeting host plant species.

Summary

This species is only known on the Inyo Mountains. Impacts to the Boisduval's blue habitat may arise from human-caused activities that include the use of pesticides and herbicides treating undesirable species and noxious weeds, recreational developments, mining, and road building.

The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of Boisduval's Blue within its range. However, due to uncertainty about the species current viability, general population loss or collapse, the limited amount of habitat on the Inyo National Forest, and potential future threats associated with climate change, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of Boisduval's Blue within the plan area.

San Emigdio Blue Butterfly

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of San Emigdio blue in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Desert scrub habitats that include desert saltbush species (*Atriplex*) and associated scale insects and ants. Other key habitat features include shadescale

scrub in desert canyons and near washes and where the host plant species (*Atriplex canescens*) occurs.

Table F-19 summarizes key threats, plan components, and expected effects on Mono Lake checkerspot butterfly.

Table F-19. Key threats, plan components, and expected effects on San Emigdio blue butterfly

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of habitat due to climate change or other stochastic events. Loss of habitat due to invasive plant species outcompeting native host plants.	WTR-FW-DC 04 TERR-FW-DC 01-05 TERR-SH-GOAL 01 & 02 SPEC-FW-DC 01, 02 & 04 INV-FW-DC 01 & 02 INV-FW-GOAL 01-04 INV-FW-STD 02 INV-FW-GDL 01-05 RCA-MEAD-DC 01-08	TERR-FW-DC 06 TERR-SH-DC 02, 03 TERR-SAGE-DC 01, 04 & 05 TERR-PINY-DC 01, 03 & 04 TERR-XER-DC 01	Plan components ensure healthy habitat is available for species to complete life cycle needs and will be resilient to climate change.
Direct mortality due to activities that cause a loss of habitat or loss of host plant species. This includes herbicide use, pesticide use, timber harvest, grazing and water impoundments from historic livestock and wild horse grazing that cause direct habitat loss or harm individuals. Recreation use may pose a threat to a loss of habitat or harm to individuals.	TERR-SH-DC 01 TERR-SH-STD 01 SPEC-FW-DC 03 SPEC-FW-GOAL 01-04 SPEC-FW-STD 01 SPEC-FW-GDL 04 INV-FW-GOAL 01 & 02 INV-FW-GDL 01-05 REC-FW-GDL 01 & 03 RCA-MEAD-OBJ 01	TERR-SAGE-DC 02 & 03 TERR-XER-DC 02 TERR-XER-STD 01 TERR-XER-GDL 01	Plan components maintain ecosystem integrity for fine-scale refugia habitat for this species, will ensure forest activities maintain open habitat where host plant and ant species occur. Plan components provide direction to maintain preferred habitat.

Information on Current Distribution of the Species in the Planning Unit

San Emigdio blue butterfly (*Plebejus emigdionis*) is a rare and localized species with collection records from the southern San Joaquin Valley and Mojave Desert south to the Victorville area. Known populations are from only about a dozen locations which are isolated from one another. The San Emigdio blue butterfly has been found on the Angeles, Inyo, Los Padres, San Bernardino, and Sequoia National Forests.

Isolated populations occur in the Owens Valley and it has been reported from Inyo, Kern, Los Angeles, San Bernardino and Ventura counties (Davenport 2004, Emmel and Emmel 1973, Garth and Tilden 1986). It has been collected along the Mojave River near Victorville (north of the San Bernardino National Forest). Isolated colonies have been reported from Bouquet and Mint Canyons near Castaic, in canyons along the north side of the San Gabriel Mountains near the

desert's edge, and in arid areas south of Mount Abel near San Emigdio Mesa (Emmel and Emmel 1973, Murphy 1990). The most concentrated area is around Sand Canyon and Lake Isabella. Pratt (2011) reports concerns of each of the populations are gradually being lost. Penrod *et al.* (2002) and Stephenson and Calcarone (1999) state that the San Emigdio blue populations have been in decline due to urbanization near Victorville and along the Mojave River.

Only known locations occur in the southern portion of the Inyo National Forest in the desert scrub habitats that include desert saltbush species (Atriplex) and associated scale insects and ants. This butterfly is rare and localized species ranging from 3,000 feet to 5,000 feet elevation in washes and alluvial fans (Schlick 2015).

Key Ecological Conditions in Plan Area

Key ecological conditions for this species include the presence of the ant species *Formica pilicornis*, in which this butterfly has a symbiotic relationship. Other key habitat features include shadescale scrub in desert canyons and near washes and where the host plant species (*Atriplex*) occurs.

Key Threats to Persistence

Threats include the drying of microsite conditions, loss of habitat due to human activities or climate change and direct mortality due to loss of host plant availability. Habitat is also subject to destruction due to agricultural and urban development.

The potential expansion of Highway 395 can potentially fragment the existing ecological conditions since the population is very localized. The population at Cartago is unique, and is in great danger of being exterminated if and when Highway 395 is widened at that point. The larval foodplant at Cartago is *Atriplex polycarpa* which is unusual because vast areas of desert are covered with *A. polycarpa* yet *emigdionis* is not found in these areas. At Cartago, the butterfly is able to use the *A. polycarpa* because it is heavily infested with a scale insect, which in turn is heavily tended by ants, and the ants also protect the *emigdionis* larvae. Without the ants, *emigdionis* could not survive. There are also possibly hydrologic factors at the Cartago site which make it favorable for the *emigdionis* larvae which spend most of their time on the *Atriplex* trunks just below soil level (Schlick 2015).

Threats Under Forest Service Control

- Loss or degradation of habitat due to land management activities within the national forest boundary.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-19 above.

- Watersheds
- Terrestrial Ecosystems and Vegetation (Special Habitats, Sage, Xeric, Pinyon)
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)
- Riparian Conservation Areas (Meadows)
- Rangeland Livestock Grazing
- Invasive Species
- Recreation

- Components for Animal and Plant Species

Threats Not Under Forest Service Control

- Any activities that alter habitat and occur outside the national forest boundary.
- Loss or degradation of habitat due to drought and changes in precipitation patterns and snowpack related to climate change.
- Invasive plant species outcompeting host plant species.

Summary

This butterfly is rare and localized (only known locations occur in the southern portion of the Inyo National Forest in the desert scrub habitats that include desert saltbush species (*Atriplex*) and associated scale insects and ants) due in part to its symbiotic relationship with the ant species *Formica pilicornis*. This symbiotic relationship paired with potential habitat fragmentation or loss due to agricultural and urban expansion impact this species' ability to persist. Impacts to the San Emigdio blue habitat may arise from human-caused activities that include the use of pesticides and herbicides treating undesirable species and noxious weeds.

The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of San Emigdio blue butterfly within its range. However, due to uncertainty about the species' current viability; the potential for habitat loss and degradation; general population loss or collapse due to direct mortality; the limited amount of habitat and potential for host species loss due to loss of desert saltbush plant species on the Inyo National Forest; and potential future threats associated with climate change, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of San Emigdio blue butterfly within the plan area.

Apache Fritillary (Apache Silverspot Butterfly)

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of the Apache Fritillary in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Perennially wet marshes and wet meadows near springs, seeps and riparian areas where host plants occur, primarily violet (*Viola neprhropylla*) and secondarily, bull thistle (*Cirsium vulgare*) and lavender thistle (*Cirsium neomexicanum*).

Table F-20 summarizes key threats, plan components, and expected effects on Apache fritillary.

Table F-20. Key threats, plan components and expected effects on Apache fritillary

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Drying of microsite conditions that include permanent wet meadow habitat, springs and seeps (groundwater dependent ecosystems) with riparian vegetation, refugia substrate and host plant species. Loss of habitat due to climate change or other stochastic events. Loss of habitat due to invasive plant species outcompeting native host plants.	WTR-FW-DC 01-03 TERR-SH-DC 01-03 TERR-SH-GOAL 01 & 02 INV-FW-DC 01 & 02 INV-FW-GOAL 01-04 INV-FW-STD 01-03 INV-FW-GDL 01-05 MA-RCA-DC 01-07 MA-RCA-GOAL 02 MA-RCA-STD 06, 08, 09 & 11 RCA-MEAD-DC 01-08 RCA-RIV-DC 01-06 RCA-LPP-DC 01 RCA-SPR-DC 01-03	MA-CW-DC 01-03 TERR-SH-DC 02 & 03	Plan components ensure healthy functioning watersheds will continue to supply ground water flow and recharge necessary to maintain habitat. Plan components ensure healthy habitat is available for species to complete life cycle needs and will be resilient to climate change.
Direct mortality due to activities that cause a loss of habitat or loss of host plant species, including timber harvest near wet meadows and activities that reduce water in wet meadow habitat or riparian areas. This includes grazing and water impoundments that reduce current velocities and allow for sediment deposition or loss of springs and seeps from historic livestock and wild horse grazing.	WTR-FW-STD 01-04 TERR-SH-STD 01 SPEC-FW-DC 01-04 REC-FW-GDL 01 & 03 RANG-FW-GOAL 03 MA-RCA-DC 10 MA-RCA-DC 04-08, 10 MA-RCA-STD 1-15, 17 & 18 MA-RCA-GDL 01-04, RCA-MEAD-OBJ 01	SPEC-FW-DC 01-04 SPEC-FW-GOAL 01-04 SPEC-FW-STD 01 SPEC-FW-GDL 04 & 05	Plan components maintain ecosystem integrity for fine-scale refugia habitat for species like the fritillary, will ensure forest activities maintain wet meadow habitat, spring/seeps/marshes and also manage for and or remove livestock from riparian conservation areas as needed so that special aquatic and terrestrial features are in proper functioning condition.

Information on Current Distribution of the Species in the Planning Unit

Apache fritillary, *Speyeria nokomis apacheana,* is found on the east slope of the Sierra Nevada Mountains in Alpine, Inyo, and Mono Counties where it occurs in marshes and wet meadows near springs, seeps and riparian areas (Fleishman et al 2002, Britten et al. 2003). The larval food plant is the violet *Viola nephrophylla*. Typical habitats where Apache silverspot adults may be observed from late July to early September (Emmel and Emmel 1973, Davenport et al. 2006) are mountain meadows, forest openings and exposed rocky ridges. Since these habitats are highly localized, minimal migration occurs between populations.

The only known locations occur in Round Valley, Inyo County and Mono Lake area (Natureserve 2017).

Key Ecological Conditions in Plan Area

Key ecological conditions include perennially wet marshes and wet meadows near springs, seeps and riparian areas where host plants, primarily violet (*Viola neprhropylla*) and secondarily, bull thistle (*Cirsium vulgare*) and lavender thistle (*Cirsium neomexicanum*) occur.

Key Threats to Persistence

Threats include loss of meadows and riparian habitat due to changes in water levels, diversions, grazing, meadow drying and conifer encroachment, snowpack and changes in spring precipitation related to climate change. According to Fleishman et al (2002), loss of the violet, lavender thistle or bull thistle due to using pesticides for other species, would be a major threat to the species. In addition, loss of habitat due to invasive plant species outcompeting native host plants is a potential threat to this species.

Threats Under Forest Service Control

- Any activities that alter water flow and hydrologic regime (grazing and water impoundments).
- Loss or degradation of habitat due to land management activities within the national forest boundary.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-20 above.

- Watersheds
- Terrestrial Ecosystems and Vegetation (Special Habitats)
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)
- Riparian Conservation Areas (Meadows; lakes and ponds; rivers and streams; seeps and springs)
- Rangeland Livestock Grazing
- Invasive Species
- Components for Animal and Plant Species

Threats Not Under Forest Service Control

- Any activities that alter water flow and hydrologic regime of habitat (grazing and water impoundments) and occur outside the national forest boundary, along with growing water use demands.
- Loss or degradation of habitat due to drought and changes in precipitation patterns and snowpack related to climate change.
- Invasive plant species outcompeting host plant species.

Summary

The Apache fritillary is known from a small distributional range and is thought to be from a range contraction since the Pleistocene. There are few known locations on the Inyo National Forest. Threats include loss of meadows and riparian habitat due to changes in water levels, diversions, grazing, meadow drying and conifer encroachment, snowpack, and changes in spring precipitation related to climate change. According to Fleishman et al (2002), loss of the violet,

lavender thistle or bull thistle due to using pesticides for other species, would be a major threat to the species.

The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of Apache Fritillary within its range. However, due to uncertainty about the species current viability, general population loss or collapse, the limited amount of habitat on the Inyo National Forest, and potential future threats associated with climate change, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of Apache Fritillary within the plan area.

A Cave Obligate Pseudoscorpion

Determination: The ecosystem plan components may not provide the ecological conditions necessary to maintain a viable population of this cave obligate pseudoscorpion, a species that is only known from the plan area. Therefore, additional species-specific plan components have been provided. The combination of ecosystem and species-specific plan components should provide the ecological conditions necessary to maintain a viable population of this cave obligate pseudoscorpion in the plan area.

General Key Ecological Conditions: Caves, where environmental conditions remain constant, like temperature and relative humidity.

Table F-21 summarizes key threats, plan components, and expected effects on cave obligate pseudoscorpion.

Table F-21. Key threats, plan components and expected effects on cave obligate pseudoscorpion

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of habitat or direct mortality due to climate change or other stochastic events. Loss of habitat or direct mortality due to activities such as mining or recreational use in cave habitat.	TERR-SH-DC 01 TERR-SH-GOAL 01 TERR-SH-STD 01 SPEC-FW-DC 02 SPEC-FW-STD 01 SPEC-FW-GDL 04 REC-FW-GDL 03	TERR-SH-DC 02 TERR-SH-GOAL 02 SPEC-FW-DC 03 SPEC-FW-GOAL 01, 06	Plan components ensure healthy habitat is available for species to complete life cycle needs and will be resilient to climate change. Plan components ensure that habitat or known location(s) are protected.

Information on Current Distribution of the Species in the Planning Unit

The widely separated and restricted localities of the two species in this genus *T. aalbui* in California and *T. ubicki* in Arizona strongly suggest that these species are relicts of a formerly widespread ancestral population, fragmented by desertification in the intervening areas. It will not be surprising if additional representatives of this genus are found in other montane or

subterranean refugia in California and Arizona (Muchmore 1997). In the Biodiversity Information Serving Our Country (BISON) database, only two locations are noted but not georeferenced for the Genera.

This species type locality is from Poleta Cave, Westgard Pass, Inyo-White Mountains, Inyo County, California, at about 2,200 meters elevation. This location is on the Inyo National Forest and is behind a locked gate (R. Aalbu Pers. Comm. 2017). An additional endemic species, the beetle *Ptomophagus inyoensis* is also endemic to this cave (R. Aalbu Pers. Comm. 2017) but has no ranking in NatureServe (2017).

Key Ecological Conditions in Plan Area

Key ecological conditions include caves, where environmental conditions remain constant, including temperature and relative humidity.

Key Threats to Persistence

Threats include loss of cave habitat, specifically where known location(s) occurs.

Threats Under Forest Service Control

- Loss or degradation of habitat due to land management activities within the national forest boundary.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-21 above.

- Terrestrial Ecosystems and Vegetation (Special Habitats)
- Recreation
- Components for Animal and Plant Species

Threats Not Under Forest Service Control

- Any activities that alter habitat found in new locations that occur outside the national forest boundary.
- Mining or cave recreation occurring outside of the national forest boundary where new locations may occur.

Summary

This species of pseudoscorpion is only known from one location. Impacts to habitat may arise from human-caused activities that include recreation use and potential mining use. This cave is currently gated and therefore protected. Risk to this species and its habitat could occur if the cave gate is vandalized and loss of habitat occurs.

The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of cave obligate pseudoscorpion on the Inyo National Forest.

Owens Valley Springsnail

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of the Owens Valley springsnail in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Cold spring water sources with perennial flow.

Table F-22 summarizes key threats, plan components, and expected effects on Owens Valley springsnail.

Information on Current Distribution of the Species in the Planning Unit

The Owens Valley springsnail is known from only 10 localities according to California Natural Diversity Database (2017), including two localities on the Inyo National Forest. It is very closely associated with springs with relatively high conductivity water supplied by the Owens Valley aquifer (USGS 1998). The species is found along escarpments of the White and Inyo Mountains on the east side of the Owens Valley.

This species is considered very small and categorized as a micro-snail (1mm to 8mm in shell width), thus, detection can be extremely difficult. For this particular species, individuals can more readily detected due to their nature of piling up on to one another or can also be found in clusters.

Key Ecological Conditions in Plan Area

This species occurs in seeps and spring-fed streams of small to moderate size. It can occur on watercress (*Rorippa*), travertine deposits or stones. It is very closely associated with springs with relatively high conductivity water supplied by the Owens Valley aquifer (USGS 1998). This species co-occurs with Wong's springsnail (*P. wongi*) at Batchelder Springs (Krueger 2016). Key ecological conditions for springsnails typically include cold spring water sources with perennial flow.

Key Threats to Persistence

Key threats to the persistence to Owens Valley springsnail include habitat degradation, invasive aquatic species and climate change.

Springs generally have consistent flow and temperature because they have a more integral connection with groundwater. As a result, they serve as refugia during periods of climatic drying especially as demonstrated in the Owens Valley/Death Valley area over the last 10,000 to 15,000 years (Hershler 1989, Hershler and Pratt 1990, Sada and Herbst 2001).

The aquifer of the Owens Valley is primarily supplied by runoff from the Sierra Nevada snowpack (USGS 1998). Springs and seeps in the Owens Valley are typically found near the toes of alluvial fans from the east slope of the Sierra Nevada, along the edges of volcanic deposits, and in areas of geologic faulting (USGS 1998). Groundwater withdrawals are perhaps the greatest threat to spring flows (Sada and Herbst 2001). Most of the flow leading into the area that used to be Owens Lake is now diverted for domestic use to the Los Angeles area. The diversion of water makes the aquifer that supplies the springs more vulnerable to excessive withdrawal (USGS 1998). USGS (1998) discussed the extent of past spring flow reductions during periods of high groundwater extraction, and modeled the potential impact to groundwater levels under different future extraction scenarios. In general, the effects of reduced discharge on springs are primarily

observed when in close proximity to the groundwater wells and there are few wells on the east side of the Owens Valley where most of the occupied *P. owensensis* springs occur. However, the modeled drop in groundwater on the east side of the valley suggests that spring flow is vulnerable to change.

Table F-22. Key threats, plan components and expected effects on Owens Valley springsnail

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Human-caused activities include eutrophication due to agricultural runoff and urbanization, sedimentation that degrades habitat. Water diversions that reduce and alter instream flow hydrology regimes, mining, including suction dredge operations. This also includes grazing and water impoundments that reduce current velocities and allow for sediment deposition.	WTR-FW-DC 01-05 WTR-FW-STD 01-03 SPEC-FW-STD 01 SPEC-FW-GDL 04 & 05 RANG-FW-GOAL 03 RANG-FW-STD 07 MA-RCA-STD 01, 04, 06, 07, 09-13, 15 & 19 MA-RCA-GDL 01-03	N/A	Plan components provide direction to maintain adequate water quality and availability—supports ecosystem integrity and resilience and maintains ecosystem conditions needed for host species and life cycle. Plan components also include direction to minimize the impacts of water diversions that reduce water quantity and quality due to management activities.
Introduction of exotic species.	INV-FW-DC 01-02 INV-FW-GOAL 01 INV-FW-STD 01 INV-FW-GDL 01 MA-RCA-GOAL 02	N/A	Plan components address the issue of exotic species and direction to manage and prevent exotics.
Climate change and changes in water temperatures due to management activities. Loss of quality habitat.	MA-RCA-DC 01-10 RCA-MEAD-DC 01-03 RCA-RIV-DC 01-06 RCA-SPR-DC 01-03	N/A	Plan components provide for ecological integrity of aquatic systems so that they are resilient to climate change and other demands, necessary for providing adequate cold water habitat.
General population loss/collapse	SPEC-FW-DC 01-04 SPEC-FW-GOAL 03, 04 SPEC-FW-GDL 03-05 MA-RCA-DC 01-10 MA-RCA-GOAL 01	N/A	Plan components ensure that management activities promote ecological conditions that support the habitat components necessary to sustain healthy, functioning population levels within the inherent capability of the landscape. Plan components provide direction to work with Federal, State and Tribes and other agencies to collaborate on restoring and maintaining at risk species and their habitat.

Water diversion from springs is also a threat to the Owens Valley springsnail (Sada and Vinyard 2002). Any changes in streamflow, particularly if water is extracted from the point of emergence or a constructed springbox can reduce the amount and extent of downstream suitable habitat (including thermal characteristics) and possibly habitat heterogeneity (Sada and Herbst 2001). Springsnails are frequently concentrated near spring sources with declining density downstream (Hershler and Sada 2002); therefore, changes in flow at the spring source could have greater consequences than diversions lower down in a spring system. Livestock grazing has been observed at many sites occupied by springsnails (Sada and Herbst 2001, Sada and Vinyard 2002). However, there is little information available that suggests livestock use of springs adversely impacts springsnail habitat with the exceptions of diversion of water that is not returned to the spring run and the construction of spring boxes at the head of the spring for diversion purposes (Sada and Herbst 2001). Hershler and Sada (2002) indicate springsnails require hard substrates for egg deposition and foraging, so if excessive grazing, or any other factor, creates conditions where hard substrates are inundated by soft sediments, suitable habitat could be detrimentally impacted.

The potential for exotic aquatic mollusk species is another potential threat to the Owens Valley springsnail. The Owens Valley springsnail has a very limited distribution in the Owens Valley, California where it is known from very few localities. These localities are springs that are sensitive to disturbance and the potential of exotic species introduction.

As noted, the underlying hydrology of the springs occupied by the Owens Valley springsnail is driven largely by the aquifer in the Owens Valley, including significant contributions from snowmelt in the Sierra Nevada. If climate change results in reduced snowpack or changes in runoff that affect groundwater recharge, there could be a reduction in water available for spring flow from the aquifer.

Threats Under Forest Service Control

- Any activities that alter water flow and hydrologic regime (grazing and water impoundments).
- Loss or degradation of habitat due to land management activities within the national forest boundary.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-22 above.

- Watersheds
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)
- Riparian Conservation Areas (Meadows; lakes and ponds; rivers and streams; seeps and springs)
- Rangeland Livestock Grazing
- Invasive Species
- Components for Animal and Plant Species

Threats Not Under Forest Service Control

- Any activities that alter water flow and hydrologic regime (grazing and water impoundments) and occur outside the national forest boundary, along with growing water use demands.
- Loss or degradation of habitat due to drought, flash floods and changes in precipitation patterns and snowpack related to climate change.
- General population loss/collapse
- Introduction of exotic aquatic species

Summary

The Owens Valley springsnail is a restricted endemic, with only two known locations on the Inyo National Forest. There is substantial concern for the species persistence due to its rarity and restriction to cold perennial seeps and springs. As a result of this rarity and its limited distribution, this species is also highly susceptible to stochastic events and drying conditions resulting from increasing temperatures and events related to climate change. Activities that reduce water flow can greatly impact this species. In addition, extremely limited dispersal ability of this species and isolated populations put it at further risk for localized extinctions.

The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of Owens Valley springsnail within its range. However, due to uncertainty about the species current viability, the potential for exotic aquatic species introduction, general population loss or collapse, the limited amount of habitat on the Inyo National Forest, and potential future threats associated with climate change and ground water use, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of Owens Valley springsnail within the plan area.

Western Pearlshell Mussel

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of the western pearlshell in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Rivers and large streams with cold, clean water and where sea-run salmon or native trout persist. Documented host fish species critical to life cycle.

Table F-23 summarizes key threats, plan components, and expected effects on western pearlshell.

Information on Current Distribution of the Species in the Planning Unit

The western pearlshell has a broad geographic distribution extending from California north to Alaska and inland to Idaho, Montana, Nevada, and Wyoming. They are most abundant in Idaho, Oregon, Washington, and British Columbia, Canada. The pearlshell most commonly inhabits cool to cold rivers, but can also be found in smaller, cold headwater streams. They typically occupy areas with low velocities, low shear stress, low gradients, and stable substrates (Vannote and Minshall 1982, Toy 1998, Howard and Cuffey 2003, Stone, et al. 2004). Spatial distribution of the mussel reflects these habitat requirements and is non-uniform and aggregated in occupied streams

with aggregations, also known as mussel beds, consisting of hundreds of individuals per square meter (Murphy 1942, Toy 1998).

Table F-23. Key threats, plan components and expected effects on western pearlshell

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Human-caused activities include eutrophication due to agricultural runoff and urbanization, sedimentation that smothers mussel beds. Water diversions that reduce and alter instream flow hydrology regimes, mining, including suction dredge operations. This also includes grazing and water impoundments that reduce current velocities and allow for sediment deposition.	WTR-FW-DC 01-07 WTR-FW-STD 01-03 SPEC-FW-STD 01 SPEC-FW-GDL 05 RANG-FW-GOAL 03 RANG-FW-STD 07 MA-RCA-DC 10 MA-RCA-STD 02, 03, 06-15, 17-18 MA-RCA-GDL 01-03	SPEC-GT-STD	Plan components provide direction to maintain adequate water quality and availability—supports ecosystem integrity and resilience and maintains ecosystem conditions needed for host species and life cycle. Plan components also include direction to minimize the impacts of water diversions that reduce water quantity and quality due to management activities.
Introduction of exotic species.	INV-FW-DC 01-02 INV-FW-GOAL 01 & 03 INV-FW-STD 01 MA-RCA-GOAL 01 & 02	N/A	Plan components address the issue of exotic species and direction to manage and prevent exotics.
Climate change and changes in stream temperatures due to management activities. Loss of quality habitat due to land management activities that degrade or eliminate habitat.	MA-RCA-DC 10 &11 MA-RCA-STD 01, 04, 05, 07,10-15, 17 & 18 MA-RCA-GDL 01-03 INV-FW-GOAL 03 RCA-RIV-DC 01-06 RCA-RIV-OBJ 01-02 MA-CW-DC 01-03 MA-CW-GDL 01-03	SPEC-GT-STD MA-RCA-DC 01-11 MA-RCA-GDL 05, 07	Plan components provide for ecological integrity of aquatic systems so that they are resilient to climate change and other demands, necessary for providing adequate stream habitat for Western pearlshell and host species (sea-run salmon and trout). Plan components for Golden Trout provide standards for the WPMU.
General population loss/collapse	SPEC-FW-DC 01-04 SPEC-FW-GOAL 03, 04 SPEC-FW-GDL 03 MA-RCA-DC 01-08 & 11 MA-RCA-GOAL 01 & 02	SPEC-GT-GOAL MA-RCA-GDL 05, 07	Plan components ensure that management activities promote ecological conditions that support the habitat components necessary to sustain healthy, functioning population levels within the inherent capability of the landscape. Plan components provide direction to work with Federal, State and Tribes and other agencies to collaborate on restoring and maintaining at risk species and their habitat.

Despite the broad distribution of this species throughout the western states, its decline has led to limited localities on the Inyo National Forest. On the Inyo National Forest, these ecological conditions can be found in the South Fork Kern River and similar river systems, especially where the host fish species may occur. Although, the South Fork Kern River provides habitat for the western pearlshell, there is little information on actual population trends or density.

A single California Natural Diversity Database record for this species was located on the Inyo National Forest along the South Fork Kern River in Monache Meadows; however, the record dates to 1948. Shells of this species were found on the Inyo at two locations in the South Fork Kern River in 2006, but no current documentation of an extant population was found.

Key Ecological Conditions in Plan Area

Western pearlshell occurs in habitats ranging in size from small creeks, 1 to 2 meters wide, to large rivers, where ever substrates are primarily composed of clean, coarse gravel, cobble and boulders. Optimal habitats for western pearlshell are low gradient (less than 4 percent; Howard 2010) pools with velocities ranging from about 25 to 30 centimeters per second and depths from 20 to 60 centimeters (Howard and Cuffey 2003, Stone et al. 2004).

Key ecological conditions include cold creeks and rivers with clean water and where sea-run salmon or native trout persist. Documented host fishes for *M. falcata* include: cutthroat trout, rainbow/steelhead trout, Chinook salmon, and brown trout, and a number of other fish are considered potential hosts.

Reproduction in freshwater mussels typically involves the female siphoning water containing sperm into the body where the eggs are fertilized. The eggs are moved into specialized structures called marsupia where they develop into tiny immature mussels called glochidia. In *M. falcata*, glochidia are released *en masse* in thousands of glochidial "packets" (called conglutinates) during a short period time, usually when the water is warming in late spring (March to July). Conglutinates resemble decaying fish tissue (O'Brien, et al. 2013) which is apparently consumed by fish, which serve as an intermediate host for the development of the glochidia. All freshwater mussels require a fish host to reproduce and disperse, and salmonids (trout and salmon) are the primary species that serve this role for the western pearlshell. The glochidia prefer to attach themselves to the gills of the host fish where the blood of the host allows for rapid growth and development. Once the glochidia develop into a juvenile mussel, they drop off of the host and begin an independent life in the streambed; however, mortality at this stage is exceedingly high. Once an individual is successfully dropped onto the substrate, it exists by siphoning water into the body to extract suspended materials which serve as a food source. Under certain circumstances, females can produce glochidia hermaphroditically which likely allows them to persist in newly colonized areas or when population density is so low that there is limited viable sperm in the water column.

Individuals can live up to 100 years (Toy 1998). Many populations of the western pearlshell appear to be stable, based on the continued presence of individuals in historic locations. However, many of these populations are no longer recruiting new individuals or the recruitment levels are very low and, in some cases, die offs have been observed (Howard and Cuffey 2006, Hastie and Toy 2008, Howard 2008). NatureServe (2017) has a comprehensive description of the rangewide declines that have been documented. With the exception of few coastal streams that are not impaired by impoundments, population declines have occurred extensively in California (Howard and Cuffey 2006, Howard 2008, Howard 2010, NatureServe 2017).

Key Threats to Persistence

Key threats to the persistence of western pearlshell include habitat degradation, invasive aquatic species, loss of host species and climate change.

Impacts to the western pearlshell from human-caused activities include eutrophication due to agricultural runoff and urbanization, sedimentation that smothers mussel beds, water diversions that reduce and alter instream flow regimes, mining, including suction dredge operations, introduction of exotic species, grazing, and water impoundments that reduce current velocities and allow for sediment deposition (Hovingh 2004, Lydeard et al. 2004, Strayer and Downing 2006, Krueger et al. 2007). Stream habitat degradation caused by historical grazing practices may have reduced the suitability of existing habitat, specifically in the Monache Meadows area, where this species is historically known to have occurred.

This mussel species depends on salmonid fish hosts to sustain and disperse larval clams. Since many salmonid species such as rainbow trout and salmon have experienced severe declines, western pearlshell mussels have declined as well (Krueger 2016).

In addition, climate change may have enhanced drying effects on smaller ephemeral ponds and meadows, changing the timing and intensity of snow melt and spring precipitation, and will also continue to put forests at risk for stand-replacing fire, which can cause sedimentation and negative changes to water quality and flow.

Threats Under Forest Service Control

- Any activities that alter water flow and hydrologic regime (grazing and water impoundments).
- Loss or degradation of habitat due to land management activities within the national forest boundary.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-23 above.

- Watersheds
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)
- Riparian Conservation Areas (Rivers and streams)
- Rangeland Livestock Grazing
- Invasive Species
- Components for Animal and Plant Species

Threats Not Under Forest Service Control

- Any activities that alter water flow and hydrologic regime (grazing and water impoundments) and occur outside the national forest boundary, along with growing water use demands.
- Loss or degradation of habitat due to drought, flash floods and changes in precipitation patterns and snowpack related to climate change.
- General population loss/collapse
- Loss of host species

Summary

The western pearlshell (*Margaritifera falcata*) is a long-lived species (up to 100 years) and has been documented widely in western North America. It has been extirpated from northern Nevada, from most areas in northern Utah, and numerous examples exist documenting the decline of this species in particular streams and rivers throughout its range. In addition, populations of western pearlshell are reported to have not reproduced for decades; populations of such a long-lived species may appear stable, when in fact they are not reproducing. There is a need to document the current distribution and abundance of this species, so that if populations decline in the future, those declines can be documented and protection for vulnerable populations can be provided.

Threats to the species include habitat degradation, invasive aquatic species, loss of host species, and climate change. Agricultural and urbanization activities can cause eutrophication and sedimentation that smoother mussel beds. Water diversions and grazing also degrade or eliminate habitat all together.

Improvements in grazing management and a decision to rest two grazing allotments (USDA Forest Service 2001) have improved stream habitat conditions throughout the South Fork Kern River watershed. The Monache Meadows is likely the only reach on the Kern Plateau where habitat improvement is questionable. An extensive channel downcutting event occurred in the 1980s and habitat conditions will likely remain poor in this reach for some time. Overall, land use practices, including more appropriate grazing strategies aimed at improving fish habitat and streambank conditions, will continue to be implemented, allowing for an upward trend in California golden trout habitat, which will in turn, may allow for improved conditions for western pearlshell mussel.

Aquatic invasive species pose a threat to habitat and known populations. Western pearlshells are particularly specialized in that they rely on a host fish species in the trout and salmonid family to carry out their life cycle; thus, persistence relies not only on suitable habitat, but also another organism to provide an intermediate host for the development of the glochidia (immature western pearlshells). Furthermore, climate change poses an additional threat on habitat. Warming stream temperatures, reductions of snowpack and lose of perennial fast moving streams, also creates substantial concern about this species ability to persist on the planning unit.

The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of western pearlshell within its range. However, due to uncertainty about the species current viability, the potential for host species loss, general population loss or collapse, the limited amount of habitat on the Inyo National Forest, and potential future threats associated with climate change and ground water use, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of western pearlshell within the plan area.

Wong's Springsnail

Determination: It is beyond the authority of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of the Wong's springsnail in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Cold spring water sources with perennial flow.

Table F-24 summarizes key threats, plan components, and expected effects on Wong's springsnail.

Information on Current Distribution of the Species in the Planning Unit

Wong's springsnail has a distribution limited to the Owens Valley and southern Lahontan basin (California) where it is known from approximately 50 localities. These localities are springs that are sensitive to disturbance, especially to impacts occurring at the point of origin. The known threats are relevant to the continued persistence of the species in many locations, with the same impacts resulting in extirpations of entire species in other locations. Populations are apparently stable presently and the known distribution of the species has not recently changed.

This species is known primarily from the Inyo National Forest and has a restricted distribution in the Owens Valley along the eastern escarpment of the Sierra Nevada Mountains. It ranges from Pine Creek south to Little Lake, and along the eastern side of the valley from French Spring to Marble Creek in the Inyo Mountains. It is also found in a few sites in Long, Adobe, and Deep Springs Valleys.

Approximately 20 California Natural Diversity Database records for this species were located on the Inyo National Forest, within six relative sites due to proximity of records. This species is considered very small and categorized as a micro-snail (1 to 8 millimeters in shell width), thus, detection can be extremely difficult. For this particular species, individuals can more readily detected due to their nature of piling up on to one another or can also be found in clusters.

Key Ecological Conditions in Plan Area

This species occurs in seeps and spring-fed streams of small to moderate size. It can occur on watercress (*Rorippa*), travertine deposits or stones. It is very closely associated with springs with relatively high conductivity water supplied by the Owens Valley aquifer (USGS 1998). This species co-occurs with Owens Valley springsnail (*P. wongi*) at Batchelder Springs (Krueger 2016).

Key ecological conditions for springsnails typically include cold spring water sources with perennial flow.

Key Threats to Persistence

Key threats to the persistence to Wong's springsnail include habitat degradation, invasive aquatic species and climate change.

Springs generally have consistent flow and temperature because they have a more integral connection with groundwater. As a result, they serve as refugia during periods of climatic drying especially as demonstrated in the Owens Valley/Death Valley area over the last 10,000 to 15,000 years (Hershler 1998, Hershler and Pratt 1990, Sada and Herbst 2001).

Table F-24. Key threats, plan components and expected effects on Wong's springsnail

Key Threats to Persistence	Ecosystem Plan Components that Alleviate or Eliminate Key Threats	Additional Species-specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Human-caused activities include eutrophication due to agricultural runoff and urbanization, sedimentation that degrades habitat. Water diversions that reduce and alter instream flow hydrology regimes, mining, including suction dredge operations. This also includes grazing and water impoundments that reduce current velocities and allow for sediment deposition.	WTR-FW-DC 01-05 WTR-FW-STD 01-03 SPEC-FW-STD 01 SPEC-FW-GDL 04 & 05 RANG-FW-GOAL 03 RANG-FW-STD 07 MA-RCA-STD 01, 04, 06, 07, 09-13, 15 & 19 MA-RCA-GDL 01-03	N/A	Plan components provide direction to maintain adequate water quality and availability—supports ecosystem integrity and resilience and maintains ecosystem conditions needed for host species and life cycle. Plan components also include direction to minimize the impacts of water diversions that reduce water quantity and quality due to management activities.
Introduction of exotic species.	INV-FW-DC 01-02 INV-FW-GOAL 01 INV-FW-STD 01 INV-FW-GDL 01 MA-RCA-GOAL 02	N/A	Plan components address the issue of exotic species and direction to manage and prevent exotics.
Climate change and changes in water temperatures due to management activities. Loss of quality habitat.	MA-RCA-DC 01-10 RCA-MEAD-DC 01-03 RCA-RIV-DC 01-06 RCA-SPR-DC 01-03	N/A	Plan components provide for ecological integrity of aquatic systems so that they are resilient to climate change and other demands, necessary for providing adequate cold water habitat.
General population loss/collapse	SPEC-FW-DC 01-04 SPEC-FW-GOAL 03, 04 SPEC-FW-GDL 03-05 MA-RCA-DC 01-10 MA-RCA-GOAL 01	N/A	Plan components ensure that management activities promote ecological conditions that support the habitat components necessary to sustain healthy, functioning population levels within the inherent capability of the landscape. Plan components provide direction to work with Federal, State and Tribes and other agencies to collaborate on restoring and maintaining at risk species and their habitat.

The aquifer of the Owens Valley is primarily supplied by runoff from the Sierra Nevada snowpack (USGS 1998). Springs and seeps in the Owens Valley are typically found near the toes of alluvial fans from the east slope of the Sierra Nevada, along the edges of volcanic deposits, and in areas of geologic faulting (USGS 1998). Groundwater withdrawals are perhaps the greatest threat to spring flows (Sada and Herbst 2001). Most of the flow leading into the area that used to be Owens Lake is now diverted for domestic use to the Los Angeles area. This diversion of water makes the aquifer that supplies the springs more vulnerable to excessive withdrawal or other groundwater extractions (USGS 1998). The U.S. Geological Survey (1998) discussed the extent of past spring flow reductions during periods of high groundwater extraction, and modeled the potential impact to groundwater levels under different future extraction scenarios. In general, the effect of reduced discharge on springs is primarily observed when in close proximity to the groundwater wells and there are more wells on the west side of the Owens Valley where most of the occupied *P. wongi* springs occur. This scenario of reduced spring flow due to groundwater pumping suggests these populations of Wong's springsnail are vulnerable to changes in habitat that would occur with increased pumping. Anticipated changes in habitat include a reduced volume of cold water discharged from the springs, which would result in a reduced stream length occupied by the snails mainly caused by water being warmed by the air. Very little information is available about the hydrology of the upper portion of the Lahontan drainage where other *P. wongi* populations occur.

A water diversion from springs is also a threat to the Wong's springsnail (Sada and Vinyard 2002). Any changes in streamflow, particularly if water is extracted from the point of emergence or a spring box is constructed can reduce the amount and extent of downstream suitable habitat (including thermal characteristics) and possibly habitat heterogeneity (Sada and Herbst 2001). Springsnails are frequently concentrated near spring sources with declining density downstream (Hershler and Sada 2002); therefore, changes in flow at the spring source could have greater consequences than diversions lower down in a spring system. Water velocity seems to be a key habitat component for some springsnails and spring boxes at the head of the spring would greatly reduce the preferred velocity (USFWS 1998). Livestock grazing has been observed at many sites occupied by springsnails and has been associated with habitat degradation (Sada and Herbst 2001, Sada and Vinyard 2002). However, there is little information available that suggests livestock use of springs adversely impacts springsnail habitat with the exceptions of diversion of water to troughs that is not returned to the spring run and the construction of spring boxes at the head of the spring for diversion purposes (Sada and Herbst 2001). Hershler and Sada (2002) indicate springsnails require hard substrates for egg deposition and foraging, so if excessive grazing, or any other factor, creates conditions where hard substrates are inundated by soft sediments, suitable habitat could be detrimentally impacted.

Threats under Forest Service Control

- Any activities that alter water flow and hydrologic regime (grazing and water impoundments).
- Loss or degradation of habitat due to land management activities within the national forest boundary.

In addition to the forestwide plan components for Animals and Plants and Terrestrial Ecosystems mentioned earlier in this section, threats are primarily addressed through plan components under the following sections and are described in Table F-24 above.

- Watersheds
- Management Areas (Riparian Conservation Areas, Conservation Watersheds)

- Riparian Conservation Areas (Meadows; lakes and ponds; rivers and streams; seeps and springs)
- Rangeland Livestock Grazing
- Invasive Species
- Components for Animal and Plant Species

Threats Not Under Forest Service Control

- Any activities that alter water flow and hydrologic regime (grazing and water impoundments) and occur outside the national forest boundary, along with growing water use demands.
- Loss or degradation of habitat due to drought, flash floods and changes in precipitation patterns and snowpack related to climate change.
- General population loss/collapse
- Introduction of exotic aquatic species

Summary

The Wong's springsnail is a restricted endemic, with limited locations on the Inyo National Forest. There is substantial concern for the species' persistence due to its rarity and restriction to cold perennial seeps and springs. As a result of this rarity and its limited distribution, this species is also highly susceptible to unpredictable events and drying conditions resulting from increasing temperatures and events related to climate change. Activities that reduce water flow can greatly impact this species. In addition, extremely limited dispersal ability of this species and isolated populations put it at further risk for localized extinctions.

The Inyo National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of Wong's springsnail within its range. However, due to uncertainty about the species current viability, the potential for exotic aquatic species introduction, general population loss or collapse, the limited amount of habitat on the Inyo National Forest, and potential future threats associated with climate change and ground water use, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of Wong's springsnail within the plan area.

Crosswalk – Animal Species of Conservation Concern

The following table is a crosswalk that shows how plan components meet species-specific habitat needs grouped by the key ecological conditions or habitat elements that species share in common. Categories are not mutually exclusive. The table does not include all plan components that provide for persistence but rather focuses on key threats and primary plan components that mitigate those threats. More detailed information on individual species contained within groups can be found in the Rationales for Animal Species Considered for Designation as Species of Conservation Concern (USDA 2018)

Table F-25. Crosswalk between species of conservation concern, key ecological conditions, key threats and primary plan components that provide for persistence

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
Large Tree and Snag Dependent: fisher, Sierra Marten, California spotted owl, great gray owl, Mount Pinos sooty grouse, and bald eagle.	Large trees and snags, cavities, downed logs, woody debris, mistletoe brooms-nesting/denning structures.	Vegetation management and fire (both natural and prescribed) and natural disturbance and (e.g. insect outbreaks, drought), climate change.	**Guidelines (SPEC-FW-GDL)** 01 Known nest, roost, or den trees used by species of conservation concern or raptors, including surrounding trees that provide beneficial thermal or predatory protection, should not be purposefully removed, with the exception of the unavoidable removal of hazard trees and as required to meet other State or Federal regulatory requirements. **Desired Conditions (TERR-RFIR-DC)** 03 At the landscape scale, areas dominated by medium and large-diameter trees and low to moderate canopy cover (between 10 and 60 percent) comprise most of the landscape. **Desired Conditions (TERR-LDGP-DC)** 04 In wet lodgepole pine forests, areas dominated by medium and large-diameter trees, comprise more than 45 percent of the landscape (table 1). Tree stocking (basal area) is highly variable, ranging from 50 to 280 square feet per acre, with most less than 150 square feet per acre (table 2). Canopy cover ranges from 20 to 70 percent but is generally 50 percent. 05 In wet lodgepole pine forests, large snag densities are between 5 and 40 snags per 10 acres (table 3). Snags are well distributed, highly irregular in spacing, and provide for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is well distributed but irregular in spacing and ranges from 1 to 20 tons per acre. **Desired Conditions (TERR-DMC-DC)** 03 At the landscape scale, areas dominated by medium and large-diameter trees comprise more than 60 percent of the landscape. Overstory tree canopy cover is generally 30 percent but ranges widely from 10 to 60 percent at a fine scale. Trees are denser in some locations, such as north-facing slopes and canyon bottoms, but in small patches in limited areas (less than 20 percent of the area). Vigorous shrubs cover 10 percent or more of the area, with density varying by aspect, slope, and soil type. 06 At the mid- to fine scale, snags greater than 20 inches in diameter are at densities between 2 to 20 snags per 10 acres, and are well distributed, but highly irregular in spacing providing for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is irregularly distributed and ranges from 1 to 5 tons per acre. **Desired Conditions (TERR-JEFF-DC)** 04 At the mid-scale, Jeffrey pine forest is composed predominantly of vigorous trees, but declining trees are an important component, providing wildlife nesting and denning habitat, future production of snags, down logs, and other coarse woody debris.

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
			05 At the mid-scale, insects and pathogens like dwarf mistletoe, *Annosus* and *Armillaria* root diseases, and Jeffrey pine beetle, occur at endemic levels and are restricted to individual stands. Witches' brooms caused by mistletoe provide habitat for wildlife species. 06 At the fine scale, size and age class diversity is high within Jeffrey pine stands. Individual large trees or tree groups provide nesting and denning habitat for wildlife. **Desired Conditions (TERR-OLD-DC)** 02 The landscape contains a mosaic of vegetation types and structures that provide foraging and breeding habitat, movement, and connectivity for a variety of old forest-associated species. 03 Between 40 and 80 percent of the forested landscape contains old forest areas. Old forest areas are clumps and patches of old forests components such as old trees, snags and large downed logs. These areas are irregularly distributed across the landscape and interspersed with stands of younger trees, shrubs, meadows, other herbaceous vegetation, and unvegetated patches. **Desired Conditions (TERR-OLD-DC)** 05 Old forests are composed of both vigorous trees and decadent trees. Clumps of large trees, snags, large logs, and decadent older trees are maintained on the landscape in sufficient numbers to benefit wildlife and are distributed throughout the planning area before and after disturbances. 06 Large snags are scattered across the landscape, generally occurring in clumps rather than uniformly and evenly distributed, meeting the needs of species that use snags and providing for future downed logs. **Desired Conditions (SPEC-SMPF-DC)** 02 Within marten core habitat and fisher Core Area 1, vegetation is trending toward desired conditions for terrestrial and riparian vegetation. 03 Marten and fisher habitat are well distributed throughout the marten's range and fisher Core Area 1, providing for foraging, denning, and resting habitat and movement across large landscapes. 04 Essential fisher habitat elements, including large living and dead trees (especially pines and oaks) and structures used by fishers for resting and denning (cavities, deformities), are common and well distributed throughout fisher Core Area 1. **Desired Conditions (SPEC-CSO-DC)** 05 Within California spotted owl territories, large trees and snags that can provide for nesting and for primary prey species are abundant and have the following characteristics: a. Moderate signs of decay with large pieces of bark pulling away from the bole that causes safe spaces or pockets for bats and flying squirrels to roost or den.

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
			b. Snags with small to large cavities, especially if they are protected by adjacent overhanging canopy. c. Whitewash around the base or on the snag, indicating it is currently being used by large birds. d. Snags with large (5 inches by 3 inches), squared-off, oval-shaped cavities typically created by pileated woodpeckers. **Desired Conditions (TERR-OLD-DC)** 01 The composition, structure, and functions of old forests and surrounding landscapes are resilient to fire, drought, insects, pathogens, and climate change. Fire occurs as a key ecological process in forest types that are adapted to fire, creating, restoring and maintaining ecosystem resilience and fire-related composition and structure. 02 The landscape contains a mosaic of vegetation types and structures that provide foraging and breeding habitat, movement, and connectivity for a variety of old forest-associated species. 03 Between 40 and 80 percent of the forested landscape contains old forest areas. Old forest areas are clumps and patches of old forests components such as old trees, snags and large downed logs. These areas are irregularly distributed across the landscape and interspersed with stands of younger trees, shrubs, meadows, other herbaceous vegetation, and unvegetated patches. 07 Coarse woody debris is distributed in patches and the density of large downed logs varies by vegetation type. Surface dead wood levels are sufficient to provide for legacy soil microbial populations. **Guidelines (TERR-OLD-GDL)** 01 When large tree densities meet desired condition levels, thinning to increase heterogeneity and resilience should emphasize retention of the oldest and largest trees, especially pines. Large trees with deformities, broken tops, large branches, and cavities should be retained for wildlife habitat whenever possible. 02 During burning, firing patterns, burn unit layout, and other firing and holding methods should limit mortality of large old trees and loss of very large snags. Consider preventing delayed mortality caused by smoldering at the base of large old trees and consider constructing fireline around large old trees and very large snags to reduce the risk of tree ignition while addressing firefighter safety. Limit fire intensity in areas with large old trees and very large snags where possible. **Standards (TERR-FW-STD)**

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
			01 Retain conifer trees greater than 30 inches in diameter. Exceptions under which trees greater than 30 inches in diameter may be removed, felled for coarse woody debris, or girdled for snag creation include: a. When public or firefighter safety is threatened and cannot be otherwise mitigated. b. When removing trees is needed for aspen, oak, or meadow restoration treatments or for cultural or Tribal importance. c. Individual trees less than 35 inches in diameter may be removed when required for equipment operability and cannot be reasonably and feasibly avoided. d. In overstocked stands to favor retention or promote growth of even larger or older shade-intolerant trees to more effectively meet tree species composition and forest structure restoration goals. **Guidelines (TERR-FW-GDL)** 01 Projects facilitate increasing heterogeneity at all scales, from tree clumps to large landscapes. Several treatment strategies can be employed: using landscape topography (slope, aspect, and slope position) to vary stand densities; promoting tree clumps and gaps within a stand, increasing the proportion of large to small trees; retaining important habitat structures such as large trees, snags, and trees with broken tops; and increasing diversity by promoting native plant species. 02 Vegetation treatment projects within forested habitats should include a widely distributed but often clumped distribution of snags and downed logs. Along forest edges and within groups and clumps of large trees, snags and downed logs should be retained to provide habitat and roost sites for wildlife species such as small mammals and cavity-nesting birds. When snags need to be removed, retain larger diameter snags with the longest expected standing longevity.
Structural diversity/stand heterogeneity, interlocking canopy: Sierra marten, fisher, California spotted owl, great gray owl	Interlocking canopy, old growth with pockets of denser stands.	Vegetation management and fire (both natural and prescribed) and natural disturbance (e.g. insect outbreaks, drought), climate change.	**Desired Conditions (TERR-FW-DC)** 01 Each vegetation type contains a mosaic of vegetation conditions, densities and structures. This mosaic, which occurs at a variety of scales across landscapes and watersheds, reflects conditions that provide for ecosystem integrity and ecosystem diversity given the inherent capabilities of the landscape that is shaped by site conditions and disturbance regimes. **Desired Conditions (TERR-RFIR-DC)** **07** At the mid- to fine scale, snags greater than 20 inches in diameter are distributed in patches. An average of 5 to 40 snags per 10 acres (table 3) provide for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is distributed in patches and ranges from 1 to 10 tons per acre. **Desired Conditions (TERR-LDGP-DC)**

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
			07 In dry lodgepole pine forests, areas dominated by medium and large-diameter trees comprise more than 60 percent of the landscape (table 1). Canopy cover is generally 10 to 40 percent but may exceed 40 percent in small patches and moist microsites (table 2). **Desired Conditions (TERR-LDGP-DC)** 03 The distribution and structure of wet lodgepole pine forests are variable, ranging from small patches of even-aged trees, with both closed and open canopies, to uneven-aged, irregular patches. Size and age class diversity is high within wet lodgepole pine stands. Individual trees are variably spaced with some tight groups. Irregularly shaped groups of large and intermediate trees are variably sized, with some overlapping tree crowns. Smaller trees are randomly distributed. **Desired Conditions (TERR-DMC-DC)** 07 At the landscape scale, the dry mixed conifer vegetation type has a mosaic of patches of trees of varied sizes and ages. It is dominated by Jeffrey pine and white fir trees, with white fir densities dependent on climate and fire trends. **Desired Conditions (TERR-JEFF-DC)** 01 At the landscape scale, the Jeffrey pine type is part of a heterogeneous mosaic of shrublands, woodlands or other vegetation types. Forests are dominated by Jeffrey pine trees and are generally open. Open-canopied stands dominate the landscape, with generally less than 10 percent of the area having more than 40 percent canopy cover. 07 At the fine scale, openings of various shapes surround and are intermixed with the trees. These gaps make up from 10 to 70 percent of the area, are typically less than 0.1 to 0.5 acre in size, and contain herbaceous plants, shrubs and tree regeneration **Guidelines (SPEC-SMPF-GDL)** 01 Within marten core habitat and fisher Core Area 1, retain overtopping and multi-storied canopy conditions, including some shade-tolerant understory trees such as firs, especially in drainages, swales and canyon bottoms and on north- and east-facing slopes. Retain a patchy mosaic of shrubs and understory vegetation, separated by more open areas, to reduce fuel continuity, increase habitat heterogeneity, support prey, and provide hiding cover, with a goal of 10 to 20 percent shrub cover at the home range scale. 02 Maintain or increase understory heterogeneity in marten denning habitat and fisher high value reproductive habitat (see glossary) to promote hiding cover such as shrub patches, coarse woody debris, and slash piles following vegetation treatments. Project design should include non-linear edges that decrease susceptibility to predation.
Old growth Dependent: Sierra marten,	Old growth components including large	Vegetation management and fire (both natural	**Desired Conditions (TERR-OLD-DC)** 01 The composition, structure, and functions of old forests and surrounding landscapes are resilient to fire, drought, insects, pathogens, and climate change. Fire occurs as a key

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
California spotted owl, great gray owl.	trees and snags, coarse down woody debris and trees in various stages of decay.	and prescribed) and natural disturbance (e.g. insect outbreaks and drought), climate change.	ecological process in forest types that are adapted to fire, creating, restoring and maintaining ecosystem resilience and fire-related composition and structure. 02 The landscape contains a mosaic of vegetation types and structures that provide foraging and breeding habitat, movement, and connectivity for a variety of old forest-associated species. 03 Between 40 and 80 percent of the forested landscape contains old forest areas. Old forest areas are clumps and patches of old forests components such as old trees, snags and large downed logs. These areas are irregularly distributed across the landscape and interspersed with stands of younger trees, shrubs, meadows, other herbaceous vegetation, and unvegetated patches. 07 Coarse woody debris is distributed in patches and the density of large downed logs varies by vegetation type. Surface dead wood levels are sufficient to provide for legacy soil microbial populations. **Guidelines (TERR-OLD-GDL)** 01 When large tree densities meet desired condition levels, thinning to increase heterogeneity and resilience should emphasize retention of the oldest and largest trees, especially pines. Large trees with deformities, broken tops, large branches, and cavities should be retained for wildlife habitat whenever possible. 02 During burning, firing patterns, burn unit layout, and other firing and holding methods should limit mortality of large old trees and loss of very large snags. Consider preventing delayed mortality caused by smoldering at the base of large old trees and consider constructing fireline around large old trees and very large snags to reduce the risk of tree ignition while addressing firefighter safety. Limit fire intensity in areas with large old trees and very large snags where possible. **Desired Conditions (TERR-ALPN-DC)** 01 Subalpine woodlands are highly variable in structure and composition. Diverse patch types vary from open woodlands with scattered trees to small, dense groves.
Complex Early Seral Habitat Dependent: Sierra marten, great gray owl.	Snags and logs, in varying densities, intermixed with newly re-sprouted or recently regenerated trees, shrubs,	Lack of disturbance, salvage logging	**Desired Conditions (TERR-CES-DC)** 01 Complex early seral habitat contains dense and variable patches of snags and other habitat elements characteristic of natural succession that are important to early seral forest-associated species. Variable densities of shrubs are managed in more productive sites depending on site potential. Aspen sprouts are well distributed in areas where they occur. 02 Snags, logs, and live trees are widely and variably distributed in large patches (greater than 100 acres when available) where vegetation has been severely burned (greater than

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
	herbs and grasses.		75 percent mortality) to provide habitat while also considering the need for other resource objectives. 03 Snags that support cavity nesting birds and mammals are sufficiently abundant and well distributed, especially large-diameter snags. Large diameter snags are retained to mimic natural mortality groups. **Goals (TERR-CES-GOAL)** 01 Restoration projects following large stand-replacing events (such as wildfire and bark beetle infestations) should consider: b. fuel loads over the long term, including the need to restore fire to the recovering or restored landscape; c. restoring forested habitat to deforested areas, including restoring connectivity; d. habitat for local wildlife species that use burned forest or habitats with high snag densities; e. other ecological restoration actions in the affected area; f. opportunities to recover economic value and carbon stored as a harvested wood product from dead and dying trees; g. the development of restoration strategies that move landscape conditions towards terrestrial and aquatic ecosystem desired conditions; h. the importance of the larger landscape or watersheds encompassing the impacted area, including watersheds or landscapes outside the affected area; i. future projections in climate and their influence on ecosystems in the affected area; and j. long-term maintenance of regional biodiversity in disturbed and adjacent undisturbed forest landscapes. **Guidelines (TERR-CES-GDL)** 02 Post-disturbance restoration projects should be designed to protect and maintain important wildlife habitat. 05 Large fires with more than 1,000 acres of contiguous blocks of moderate and high vegetation burn severity (greater than 75 percent mortality) in forest vegetation types (Jeffery pine, dry mixed conifer, red fir, and lodgepole pine) should retain at least 10 percent of the moderate and high vegetation burn severity area without harvest to provide areas of complex early seral habitat.
Sagebrush Dependent: Sage grouse, Bi-	Large and contiguous sagebrush stands mixed with areas	Pinyon-Juniper expansion and conifer encroachment,	**Desired Conditions (SPEC-SG-DC)** 01 Suitable sage-grouse habitat includes breeding, brood-rearing, and wintering habitats that are distributed to allow for dispersal and genetic flow.

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
State population segment.	of wet meadows, riparian, or irrigated agriculture fields.	Invasive species (cheatgrass),Vegetation/Fuels Management, Wildfires, Inadequate forage, Livestock grazing	02 High quality nesting cover, conditions that support high levels of quality pre-laying hen habitat and dietary protein intake needs, and habitat supporting chick-rearing nutritional needs occur throughout breeding habitat in each population management unit. 03 Sage-grouse brood-rearing habitat occurs in the Bodie, South Mono, and White Mountains population management units and includes a range of shrub cover, perennial grass cover, forb density, and meadows. 04 Sage-grouse habitat is maintained or enhanced within and between population management unit corridors and allows for population movement, seasonal movements, and genetic flow. 05 Sage-grouse habitats do not include overstory trees, such as pinyon pine, juniper, or Jeffrey pine. 06 The extent and dominance of nonnative annual grass species, such as cheatgrass, is limited and does not lead toward reduction in the suitability of sage-grouse habitat. 07 Unwanted fire (more frequent, severe, or larger than the natural range of variation) in sage-grouse priority habitat is limited or prevented. 08 At the stand/site scale (10 to 100 acres), sagebrush and understory cover occur in a mosaic across the site, with 1-acre patches meeting the desired conditions for nest sites and brood-rearing areas, in areas that are consistent with the site and the sagebrush species potential. 09 Meadows within sage-grouse range provide suitable habitat for sage-grouse, including desirable foraging species (insects and plants), have suitable sagebrush cover around the meadows edge, are hydrologically fully functional and vegetation is within mid-seral conditions. Within livestock allotments in sage-grouse range, meadow condition is trending towards or rated at fully functional based on forestwide range utilization standards. **Objective (SPEC-SG-OBJ)** 01 Within 10 years of the plan approval, up to 14,900 acres of sage-grouse habitat, within and between population management units, will be improved or restored to meet sage-grouse priority habitat desired conditions. **Standards (SPEC-SG-STD)** 01 Habitat restoration projects for the sage-grouse shall be designed to meet one or more of the following habitat needs: a. Promote the maintenance of extensive, intact sagebrush communities; b. Limit the expansion or dominance of invasive species, including cheatgrass, and the expansion of pine species, including pinyon-juniper and Jeffrey pine; c. Maintain or improve soil site stability, hydrologic function, and biological integrity; and

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
			d. Enhance the native plant community. 02 Habitat restoration projects for the sage-grouse must include measures to improve suitability of breeding or brood rearing habitat. 03 Within sage-grouse habitat, ensure that habitat restoration activities, vegetation treatments, or other authorized uses on the national forest, maintain or move toward vegetation desired conditions for sage-grouse. Short-term (1 to 10 year) impacts are allowed to deviate from these habitat standards, if the long-term (10 to 30 years) project objective is to achieve desired conditions. 04 Mitigate long-term negative impacts to sage-grouse habitat from activities, to the extent practicable and within agency authority. 05 Require site-specific project mitigation if needed to insure no net loss of habitat within the Inyo National Forest due to project disturbance. 06 Establish a limiting operating period for the sage-grouse breeding season (which current best available science indicates is March 1 to May 15) within suitable breeding habitat for any activities that would cause disturbances during this time. These dates can be adjusted based on current nesting conditions or risk assessment. 07 Establish a limiting operating period for the sage-grouse nesting season (which current best available science indicates is May 1 to June 15) within suitable nesting habitat for any activities that would lead to disturbances during this time. These dates can be adjusted based on current nesting conditions or risk assessment. 08 When conducting livestock grazing allotment assessments, establish key areas in meadow or upland habitats, where absent in occupied sage-grouse habitat. 09 Within sage-grouse priority habitat, use genetically and climatically appropriate native plant and seed material when seeding the area. 10 No new tall structures, which could serve as predator perches, will be authorized within four miles of an active lek in suitable habitat. If structures are needed within this area then anti-perching devices shall be installed. During the permit renewal process, existing powerlines and other utility structures within 4 miles of active leks in suitable habitat will be retrofitted with perch-deterring devices. 11 All fences and other barriers constructed or replaced within 1.2 miles of a known lek, in suitable habitat must be let-down fences and/or marked with fence markers. 12 Within suitable habitat, manage permitted watering facilities to prevent drowning or entrapment and provide mosquito control to reduce the risk of creating a vector for diseases. 13 Do not locate new salting, supplemental feeding locations, livestock watering, and handling facilities on sage-grouse leks.

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
			14 After soil disturbance or seeding, subsequent soil-disturbing management activities shall not occur until desired habitat conditions have been met within sage-grouse habitat unless a resource team determines that disturbance will help achieve desired conditions. 15 Consult a resource advisor during wildfires in sagebrush to identify suitable sage-grouse habitat and to suggest opportunities for retaining and protecting sagebrush stands. When safe and feasible, protect highly valued suitable sage-grouse habitat ahead of burn operations using techniques such as targeted burning and providing direct protection. **Guidelines (SPEC-SG-GDL)** 01 Use existing roads to co-locate new powerlines to reduce disturbance footprints (areas) and habitat fragmentation. 02 Where feasible, bury utility lines to reduce overhead perches. 03 When agency personnel, contractors, and permit holders are driving off road and working in areas with known noxious weed infestation, the vehicles should be cleaned before entering a different area to reduce the spread of noxious weeds. 04 Vegetation treatments and disturbances that reduce connectivity should be seeded or transplanted with sagebrush to restore patches of sagebrush cover and connect existing patches to improve sage-grouse habitats within and between population management units.
All Riparian Dependent Species	Loss in connectivity between habitat patches; declining/drying meadow conditions.	Changes in timing and flow of water and water availability resulting from climate change (e.g. drought) and/or hydroelectric power/water diversions and increasing demands for water by humans. Forest management activities (fire, veg, livestock grazing)	**Desired Conditions (MA-CW-DC)** 01 Conservation watersheds provide high-quality habitat and functionally intact ecosystems that contribute to the persistence of species of conservation concern and the recovery of threatened, endangered, proposed, or candidate species. 03 The drainage connections between floodplains, wetlands, upland slopes, headwaters, and tributaries are intact and provide for breeding, dispersal, overwintering, and feeding habitats for at-risk species. These areas provide refugia if other areas of the watershed are disturbed by events such as floods, landslides, and fires. **Desired Conditions (WTR-FW-DC)** 07 Where stream diversions or other flow modifications are not regulated by the Federal Energy Regulatory Commission, at-risk species and beneficial uses are sustained. In-stream flows allow for at-risk species habitat and sustain riparian resources, channel integrity, and aquatic passage**.** **Desired Conditions (MA-RCA-DC)** 02 Riparian conservation areas have ecological conditions that contribute to the recovery of threatened and endangered species and support persistence of species of conservation concern as well as native and desired nonnative aquatic and riparian-dependent plant and animal species.

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
			Objective (MA-RCA-OBJ) 01 Restore the structure and composition of at least 400 acres in riparian areas within 10 years following plan approval, emphasizing riparian areas that face the most risk from large-scale high-intensity fire, past fire exclusion, or accelerated flooding events associated with climate change. **Standards (MA-RCA-STD)** 01 Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages. 05 All new or replaced permanent stream crossings shall accommodate at least the 100-year flood, its bedload, and debris. Estimates for 100-year flood potential will reflect the best available science regarding potential effects of climate change. 06 Locate water drafting sites to minimize adverse effects to instream flows and depletion of pool habitat. 09 Use screening devices for water drafting pumps. (Fire suppression activities are exempt during initial attack.) Use pumps with low entry velocity to minimize removal of aquatic species from aquatic habitats, including juvenile fish, amphibian egg masses and tadpoles. 10 Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining fen ecosystems and the plant species that depend on these ecosystems. 17 Locate new livestock handling facilities and stock driveways, salting, and supplemental feeding outside of meadows and riparian areas except where there are no other feasible alternatives and where placement is consistent with meeting watershed or water quality best management practices if located in riparian conservation areas. **Guidelines (FIRE-FW-GDL)** 04 When managing wildland fire, allow fire to burn in riparian ecosystems when fire effects are expected to be within the natural range for the ecosystem to improve riparian ecosystem function. 05 Where possible during wildland fire management activities, locate incident bases, camps, helibases, staging areas, helispots and other centers for incident activities outside of riparian conservation areas to avoid impacts to aquatic- and riparian-dependent resources.
Seeps and Springs Dependent: Inyo Mountains slender	Slow moving water Cold spring water sources with perennial flow	Lowering of the water table, Dewatering or channelization, invasion by	**Guidelines (SPEC-FW-GDL)** 05 Water developments (such as a diversion or well) should be avoided near streams or seeps and springs where there is high risk of dewatering aquatic and riparian habitats where at-risk species occur.

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
salamander, Kern plateau salamander, Black toad, Willow Flycatcher, Western Pearlshell, Owens Valley Springsnail, Wong's Springsnail		nonnative species, Wetland drainage, Spring capping, flood scouring, overgrazing, trampling.	**Desired Conditions (RCA-SPR-DC)** 01 Springs provide sufficient water to maintain healthy habitats for native riparian and aquatic species. 02 Springs are resilient to natural disturbances, groundwater diversions, and changing climate conditions. Springs function across the landscape within their type and water availability. 03 Springs and associated streams and wetlands have the necessary soil, water, and vegetation attributes to be healthy and functioning at or near potential. Water flow is similar to historic levels and persists over time, within constraints of climate change.
Wet/Riparian Meadow Dependent: Willow Flycatcher, Sage grouse, Sierra marten, Black toad, Inyo Mountains slender salamander, Apache Fritillary, Mono Lake Checkerspot, Sierra Sulphur	Dense thickets of shrubby vegetation, structural heterogeneity, perennial water source. Perennially wet marshes and wet meadows near springs, seeps and riparian areas where host plant species may occur.	Lowering of the water table, Dewatering or channelization, invasion by nonnative species.	**Guidelines (SPEC-FW-GDL)** 05 Water developments (such as a diversion or well) should be avoided near streams or seeps and springs where there is high risk of dewatering aquatic and riparian habitats where at-risk species occur. **Desired Conditions (RCA-MEAD-DC)** 01 Meadows are hydrologically functional. Sites of accelerated erosion, such as gullies and headcuts are stabilized, recovering, or within the natural range of variation 02 Wetlands and groundwater-dependent ecosystems (including springs, seeps, fens, wet meadows, and associated wetlands or riparian systems) support stable herbaceous and woody vegetative communities that are resilient to drought, climate change, and other stressors. Root masses stabilize stream channels, shorelines, and soil surfaces. The natural hydrologic, hydraulic, and geomorphic processes in these ecosystems sustain their unique functions and biological diversity. 03 Meadows are resilient and recover rapidly from natural and human disturbances. They exhibit a high degree of hydrologic connectivity laterally across the floodplain and vertically between surface and subsurface flows. They provide important ecosystem services such as high-quality water, recharge of streams and aquifers, and moderation of climate variability and change. 04 Soils in wet and headwater meadows are influenced by a shallow water table and function to filter water. These soils also store and release water over an extended period of time, which helps to maintain streamflow during dry summer months. 05 Meadows have substantive ground cover and a rich and diverse species composition, especially of grasses and forbs. Meadows have high plant functional diversity with multiple successional functional types represented. Perennial streams in meadows contain a

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
			diversity of age classes of shrubs along the streambank, where the potential exists for these plants. 06 A complexity of meadow habitat types and successional patterns support native plant and animal communities. Meadow species composition is predominantly native, where graminoid (grass-like) species are well represented and vigorous, and regeneration occurs naturally. Healthy stands of willow, alder, and aspen are present within and adjacent to meadows with suitable physical conditions for these species. Natural disturbances and management activities are sufficient to maintain desired vegetation structure, species diversity, and nutrient cycling. **Guidelines (FIRE-FW-GDL)** 04 When managing wildland fire, allow fire to burn in riparian ecosystems when fire effects are expected to be within the natural range for the ecosystem to improve riparian ecosystem function. 05 Where possible during wildland fire management activities, locate incident bases, camps, helibases, staging areas, helispots and other centers for incident activities outside of riparian conservation areas to avoid impacts to aquatic- and riparian-dependent resources.
Dry/Non-riparian Meadow Dependent: great gray owl, Nelson desert bighorn sheep, California spotted owl, Sierra marten, Kern Plateau salamander, Mount Pinos sooty grouse, Boisduval's blue, square dotted blue	Native plant composition, openness. Dry meadows, clearings or openings where host plant species may occur.	Invasive plants, conifer/ woodland encroachment, unmanaged grazing.	**Desired Conditions (SPEC-SHP-DC)** 01 An adequate amount of suitable habitat supports persistent populations of bighorn sheep. These habitat patches include unforested openings supporting productive plant communities with a variety of forage species in and near adequate steep rocky escape terrain throughout the elevational range within mountain ranges. These areas meet different seasonal needs for each sex for feeding, night beds, birthing sites, lamb rearing, and migration routes between suitable habitat patches. **Desired Conditions (RCA-MEAD-DC)** 01 Meadows are hydrologically functional. Sites of accelerated erosion, such as gullies and headcuts are stabilized, recovering, or within the natural range of variation 06 A complexity of meadow habitat types and successional patterns support native plant and animal communities. Natural disturbances and management activities are sufficient to maintain desired vegetation structure, species diversity, and nutrient cycling. 07 Meadows in montane and upper montane areas have low to moderate-severity fire restored as an ecological process, especially on meadow edges, limiting conifer encroachment and enhancing native understory plant composition and cover.
Aquatic/Water Dependent: California golden	Large bodies of water (lakes or reservoirs) or free	Lowering or depletion of the water table,	**Standard (SPEC-GT-STD)** 01 High quality habitat for all golden trout streams should be managed as best that can be achieved given the incised conditions of the stream channels as defined by accepted

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
trout, bald eagle, Western pearlshell, Owens Valley springsnail, Wong's springsnail	flowing large rivers with adjacent large live trees or snags. Rivers and large streams with cold, clean water and where pooling habitat/undercut banks and emergent vegetation is present. Cold spring water sources with perennial flow.	sedimentation, changes in water temperature.	methodologies such as proper functioning condition, stream condition inventory, and desired conditions using the greenline method for riparian vegetation habitat. **Desired Conditions (RCA-RIV-DC)** 01 Stream ecosystems, riparian corridors, and associated stream courses sustain ecosystem structure; are resilient to natural disturbances (such as flooding) and climate change; promote the natural movement of water, sediment and woody debris; and provide habitat for native aquatic species or desirable nonnative species. 02 Stream ecosystems, including ephemeral watercourses, exhibit full connectivity where feasible to maintain aquatic species diversity, except where barriers are maintained in good condition to protect native aquatic species. Ephemeral watercourses provide for dispersal, access to new habitats, perpetuation of genetic diversity, and nesting and foraging habitat for riparian and aquatic species. 03 Instream flows are sufficient to sustain desired conditions of riparian, aquatic, wetland, and meadow habitats and retain patterns of sediment, nutrients, and wood routing as close as possible to those with which aquatic and riparian biota evolved. The physical structure and condition of streambanks and shorelines minimize erosion and sustain desired habitat diversity. 04 Streams and rivers maintain seasonal water flow over time, including periodic flooding, which promotes natural movement of water, sediment, nutrients, and woody debris. Flooding creates a mix of stream substrates for fish habitat, including clean gravels for fish spawning, large wood structures, and sites for riparian vegetation to germinate and establish. 05 Stream channel conditions exhibit a sediment regime under which aquatic and riparian ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport. The sediment regime should be similar to the natural distribution of reference conditions. 06 Within rivers and streams, the level of coarse large woody debris is within the natural range of variation. **Lakes, Pools, Ponds** Desired Conditions (RCA-LPP-DC) 01 Natural lakes and ponds retain necessary attributes, such as adequate vegetation and large woody debris to function properly and support native biotic communities. Attributes include floodwater retention and groundwater recharge, stabilized islands and shoreline features, and diverse characteristics to provide for amphibian production, waterfowl breeding and biodiversity.

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Fire Adapted Ecosystems Dependent: Sierra marten, great gray owl, California spotted owl, Mount Pinos Sooty grouse, bald eagle	Large trees, snags, forest structural complexity and connectivity across large landscapes.	Uncharacteristic stand replacing wildlife, climate change, drought, insect and disease outbreaks	**Desired Conditions (TERR-RFIR-DC)** 02 Fire occurs as a key ecological process in red fir forests where it does not pose an unacceptable risk to life and property. Fire as an ecological process creates, restores, and maintains ecosystem resilience and increases understory plant vigor, heterogeneity, and habitat diversity. **Desired Conditions (TERR-LDGP-DC)** 02 Fire occurs as a key ecological process in lodgepole pine forests where it does not pose an unacceptable risk to life and property. Fire as an ecological process creates, restores, and maintains ecosystem resilience and increases understory plant vigor, heterogeneity, and habitat diversity. **Desired Conditions (TERR-DMC-DC)** 02 At the landscape-scale, fire is a key ecological process, creating a diversity of vegetation types, lower surface fuels and diverse understory vegetation. Fires occur frequently, on average every 5 to 15 years, with mostly low and moderate severity. Patches burned at high severity (greater than 75 percent basal area mortality) are rarely greater than 200 acres, and the proportion of areas burned with high severity is generally less than 15 percent. **Desired Conditions (TERR-JEFF-DC)** 02 At the landscape-scale, fire is a key ecological process, creating a diversity of vegetation types, lower surface fuels and diverse understory vegetation. Fires occur frequently, on average every 5 to 15 years, with mostly low and moderate severity. Patches burned at high severity (greater than 75 percent basal area mortality) are rarely greater than 200 acres, and the proportion of areas burned with high severity is generally less than 15 percent. **Desired Conditions (TERR-OLD-DC)** 01 The composition, structure, and functions of old forests and surrounding landscapes are resilient to fire, drought, insects, pathogens, and climate change. Fire occurs as a key ecological process in forest types that are adapted to fire, creating, restoring and maintaining ecosystem resilience and fire-related composition and structure. **Desired Conditions (SPEC-SMPF-DC)** 01 Risk of large high-severity fire is reduced from current conditions in marten habitat core areas and fisher Core Area 1. **Desired Conditions (FIRE-FW-DC)** 01 Wildland fires burn with a range of intensity, severity and frequency that allow ecosystems to function in a healthy and sustainable manner. Wildland fire is a necessary

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
			process, integral to the sustainability of fire-adapted ecosystems (see TERR-FW-DC related to fire). **Goals (FIRE-FW-GOAL)** 01 Reduce fuel accumulations, help maintain and protect habitat for a variety of species, reduce smoke from larger fires, provide added protection for communities, and restore fire on the landscape. 02 Base fire management on an all lands risk-based approach in planning and decisionmaking that is responsive to the latest fire and social sciences and is adaptable to rapidly changing conditions, including climate change. 03 Plan restoration and fire management projects for large landscapes (subwatershed or larger) when and where possible to improve economic feasibility of restoration and effectiveness of changing the negative fire effects from large wildfires. 05 Restore ecosystems to a more fire-resilient condition and lessen the threat of wildfire to communities. 10 Coordinate with researchers, partners, and Tribes to help achieve desired conditions in ecosystems that are experiencing (or may experience in the future) more frequent, severe, or large fires than the natural range of variation due to factors such as invasive annual grasses and changing climate. Standards **Guidelines (FIRE-FW-GDL)** See also SPEC-SG-GDL 08. 01 Use naturally ignited and prescribed wildland fires to meet multiple resource management objectives where and when conditions permit and risk is within acceptable limits. **Desired Conditions (TERR-ALPN-DC)** 02 Fires occur infrequently, are mostly very small, and burn with mixed severity. Fire intensity is highly variable, but crown fires are usually limited in size. **Desired Conditions (TERR-FW-DC)** 08 Fire occurs as a key ecological process in fire-adapted ecosystems where it does not pose an unacceptable risk to life and property. Fire occurs within an ecologically appropriate regime of frequency, extent, and severity, and enhances ecosystem heterogeneity and habitat and species diversity. **Desired Conditions (DA-WILD-DC)** 03 Fire is restored as an ecosystem process and natural disturbance agent in wilderness where possible.

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Multiple Uses (Hunting/Recreation/Infrastructure: Mount Pinos Sooty Grouse, Bald Eagle, California Golden Trout, Willow Flycatcher, Great Gray owl, Sierra Marten, Sage grouse	Breeding and Foraging Habitat.	Disturbance and direct mortality.	**Desired Conditions (SPEC-FW-DC)** 05 The national forest provides high quality hunting and fishing opportunities. Habitat for nonnative fish and game species is managed in locations and ways that do not pose substantial risk to native species, while still contributing to economies of local communities. **Desired Conditions (DA-WILD-DC)** 05 Each wilderness area accommodates levels of recreation use that are ecologically sustainable. 08 Trails in wilderness are located in resilient areas, and do not cause adverse impacts to at-risk species, water quality, soils, hydrologic connectivity, or cultural resources. **Guideline (MA-GRA-GDL)** 01 Use direct management techniques to reduce impacts on resources. **Desired Conditions (DA-WILD-REC1-DC)** 02 An unmodified natural environment characterizes the area. Ecological and natural processes are minimally affected by the action of users. Environmental impacts are low and restricted to minor losses of vegetation where camping occurs and along travel routes. Most impacts recover on an annual basis and are apparent to few visitors. 03 Campsites are at low-density levels and show minor impacts that will rarely persist year to year. 04 There is very little vegetation loss or alteration of duff and litter layer by human use. 05 Riparian, lakeshore and stream channel conditions show no measurable degradation due to human uses. **Desired Conditions (REC-FW-DC)** 04 Areas of the national forest provide for a variety of activities with minimal impact on sensitive environments and resources. 08 Dispersed recreation occurs in areas outside of high visitation, developed facilities or communities, and does not adversely impact natural or cultural resources. **Goals (REC-FW-GOAL)** 06 Collaborate with a variety of partners to provide stewardship and interpretive services that enhance responsible recreation and increase knowledge of related socioeconomic and environmental issues. **Guidelines (REC-FW-GDL)** 01 Avoid locating new recreation facilities within environmentally and culturally sensitive areas, such as at-risk species breeding habitat or at-risk plant species habitat. 02 Create infrastructure that mimics the natural textures and colors of the surrounding landscape to be consistent with the recreation setting.

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
			03 Use integrated resource planning when designing projects to address impacts to at-risk species habitat and changing conditions in recreation settings. **Desired Conditions (INFR-FW-DC)** 03 Roads allow for safe and healthy wildlife movement in areas of human development. Vehicular collisions with animals are rare. **Guidelines (LAND-FW-GDL)** 02 Where feasible, bury new or reconstructed power distribution lines (33kV or less) and telephone lines to reduce impacts resources such as scenery and at-risk species habitat.
Connected landscapes: Sierra marten, fisher, California spotted owl, Nelson Desert Bighorn sheep, great gray owl.	Large contiguous blocks of habitat providing movement corridors for foraging, breeding, and dispersal.	Forest activities or natural disturbance events (e.g. wildfire, drought) that cause habitat fragmentation.	**Desired Conditions (MA-CBRA-DC)** 02 These areas contribute to ecosystem and species diversity and sustainability, serve as habitat for fauna and flora, and offer wildlife corridors. These areas provide a diversity of terrestrial and aquatic habitats, and support species dependent on large, undisturbed areas of land. **Desired Conditions (TERR-FW-DC)** 06 The landscape contains a mosaic of vegetation types and structures that provide habitat, movement and connectivity for a variety of species including wide-ranging generalists such as bear, mountain lion, and deer; more localized, semi-specialists such as ground-nesting, shrub-nesting, and cavity-nesting birds and various bats; and specialists such as old forest and sagebrush-associated species. **Desired Conditions (DA-WILD-DC)** 08 Forest system trails that access wilderness are part of a high-quality wilderness experience for visitors. Forest system trails meet national quality standards, with minimal deferred maintenance and adhere to the national trail classification system. Trails in wilderness are located in resilient areas, and do not cause adverse impacts to at-risk species, water quality, soils, hydrologic connectivity, or cultural resources. **Guidelines (TIMB-FW-GDL)** 03 On lands not suited for timber production, reforestation of deforested lands should contribute to ecological restoration, while providing benefits such as improving scenic character, restoring connectivity for wildlife, increasing carbon storage and improving watershed condition. **Desired Conditions (TERR-OLD-DC)** 02 The landscape contains a mosaic of vegetation types and structures that provide foraging and breeding habitat, movement, and connectivity for a variety of old forest-associated species. **Desired Conditions (SPEC-SMPF-DC)**

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			03 Marten and fisher habitat are well distributed throughout the marten's range and fisher Core Area 1, providing for foraging, denning, and resting habitat and movement across large landscapes. **Desired Conditions (SPEC-CSO-DC)** 01 California spotted owl habitat is well distributed within the capability of the plan area and provides for nesting, roosting, and foraging habitat while promoting movement across large landscapes and adjacent landownerships. **Desired Conditions (INFR-FW-DC)** 03 Roads allow for safe and healthy wildlife movement in areas of human development. Vehicular collisions with animals are rare. **Goals (FIRE-FW-GOAL)** 03 Plan restoration and fire management projects for large landscapes (subwatershed or larger) when and where possible to improve economic feasibility of restoration and effectiveness of changing the negative fire effects from large wildfires.
Special habitats and rare endemics/ restricted distributions: Inyo Mountains slender salamander, Black Toad, Kern Plateau Salamander, California Golden Trout, Western Pearlshell, Owens Valley Springsnail, Wong's Springsnail, Apache Fritillary, Boisduval's Blue, Mono Lake Checkerspot, San Emigdio	Special habitats and or microsite conditions that provide connectivity or refugia. Population collapse.	Direct loss of vegetation, change in species composition, and microsite conditions, inability to disperse due to drought or habitat disturbance, loss of riparian and aquatic habitat Direct mortality from host species loss	**Desired Conditions (SPEC-FW-DC)** 04 The structure and function of the vegetation, aquatic and riparian system, and associated microclimate and smaller scale elements (like special features such as carbonate rock outcrops, fens, or pumice flats) exist in adequate quantities within the capability of the plan area to provide habitat and refugia for at-risk species with restricted distributions. **Desired Conditions (TERR-SH-DC)** 01 The integrity of special habitats is maintained or improved from current conditions. Composition, diversity, and structure are maintained in all areas, including those with multiple-use activities. 02 Microclimate or smaller scale habitat elements provide habitat and refugia for species with a specific geographic or restricted distribution. 03 Conditions remain suitable for long-term sustainability of the suite of native plants adapted to special habitats and their associated insect pollinators. **Goals (TERR-SH-GOAL)** 01 Work cooperatively with researchers and interested parties to study, monitor and assist in appropriate restoration measures of special habitats. 02 Include the location of special habitats in the corporate geographic information system. **Standard (TERR-SH-STD)** 01 At the project scale, evaluate and incorporate maintenance and enhancement needs for special habitats into project design and implementation.

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
Blue, Sierra Sulphur, Square Dotted Blue, Cave Obligate Pseudoscorpion			**Guidelines (FIRE-FW-GDL)** 06 During wildfires, avoid fire management activities in special habitats (see Terrestrial section, chapter 2) except when necessary to protect life and property. This includes activities such as line construction, staging areas, safety zones, water drafting, and camps. When conducting fire management activities near special habitats, take extra measures to avoid spread of invasive plants.
Host Species Dependent: Western Pearlshell, Apache Fritillary, Boisduval's Blue, Mono Lake Checkerspot, San Emigdio Blue, Sierra Sulphur, Square Dotted Blue	Host species required to complete a portion or entire life cycle.	Direct mortality from loss of host species.	**Desired Conditions (SPEC-FW-DC)** 01 Sustainable populations of native and desirable nonnative, plant and animal species are supported by healthy ecosystems, essential ecological processes, and land stewardship activities, and reflect the diversity, quantity, quality and capability of natural habitats on the national forest. These ecosystems are also resilient to uncharacteristic fire, climate change, and other stressors, which supports the long-term sustainability of plant and animal communities. 02 Habitats for at-risk species support self-sustaining populations within the inherent capabilities of the plan area. Ecological conditions provide habitat conditions that: contribute to the survival, recovery, and delisting of species under the Endangered Species Act; preclude the need for listing new species; improve conditions for species of conservation concern (including minimal impacts from diseases); and sustain both common and uncommon native species. 04 The structure and function of the vegetation, aquatic and riparian system, and associated microclimate and smaller scale elements (like special features such as carbonate rock outcrops, fens, or pumice flats) exist in adequate quantities within the capability of the plan area to provide habitat and refugia for at-risk species with restricted distributions. **Desired Conditions (TERR-SH-DC)** 01 The integrity of special habitats is maintained or improved from current conditions. Composition, diversity, and structure are maintained in all areas, including those with multiple-use activities. 02 Microclimate or smaller scale habitat elements provide habitat and refugia for species with a specific geographic or restricted distribution. 03 Conditions remain suitable for long-term sustainability of the suite of native plants adapted to special habitats and their associated insect pollinators. **Goals (TERR-SH-GOAL)** 01 Work cooperatively with researchers and interested parties to study, monitor and assist in appropriate restoration measures of special habitats. 02 Include the location of special habitats in the corporate geographic information system.

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
			Standard (TERR-SH-STD) 01 At the project scale, evaluate and incorporate maintenance and enhancement needs for special habitats into project design and implementation.
Black Toad, Nelson Desert Bighorn Sheep	Population collapse	Direct mortality from disease	**SPEC-SHP-DC** 02 The risk of disease transmission from domestic sheep and goats to bighorn sheep (based upon the best available risk assessment model) is reduced to the maximum extent practicable. **SPEC-SHP-STD** 01 Do not allow domestic sheep or goat grazing or pack goat use adjacent to bighorn sheep populations where relevant bighorn sheep risk assessment models show there is a high risk of contact and spread of disease, unless risks can be adequately mitigated. 02 Manage recreation, or other disturbances, where research has found it to cause bighorn sheep to avoid important habitat as described in the Sierra Nevada Bighorn Sheep Recovery Plan or other guidance from the U.S. Fish and Wildlife Service. **SPEC-FW-DC** 02 Habitats for at-risk species support self-sustaining populations within the inherent capabilities of the plan area. Ecological conditions provide habitat conditions that: contribute to the survival, recovery, and delisting of species under the Endangered Species Act; preclude the need for listing new species; improve conditions for species of conservation concern, including addressing threats (e.g. minimal impacts from diseases); and sustain both common and uncommon native species. **Desired Conditions (INV-FW-DC)** 01 Terrestrial and aquatic invasive species are controlled or eradicated when possible, and establishment of new populations is prevented. 02 The area affected by invasive species and introduction of new invasive species is minimized. **Goal (INV-FW-GOAL)** 01 Coordinate and cooperate with local, State and Federal agencies and Tribes to manage and control invasive and nonnative species. 03 Coordinate with research and other organizations to evaluate the potential effects of climate change on the spread of invasive and nonnative species. **Standards (INV-FW-STD)** 01 When working in waterbodies with known aquatic invasive species, clean equipment and vehicles before moving to other waterbodies.

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
			03 Use an integrated pest management approach in the planning and implementation of all projects and activities. **Guidelines (INV-FW-GDL)** 01 Projects should be designed to minimize invasive species spread by incorporating prevention and control measures into ongoing management or maintenance activities that involve ground disturbance, terrestrial or aquatic habitat alteration, or the possibility of spreading invasive species. When feasible, projects should include measures to use invasive species-free gravel, fill, and topsoil; include follow-up inspections as needed and specified in regional or national strategies.
ALL	**ALL**	Stochastic events causing widespread or complete habitat loss.	**Desired Conditions (SPEC-FW-DC)** 01 Sustainable populations of native and desirable nonnative, plant and animal species are supported by healthy ecosystems, essential ecological processes, and land stewardship activities, and reflect the diversity, quantity, quality and capability of natural habitats on the national forest. These ecosystems are also resilient to uncharacteristic fire, climate change, and other stressors, which supports the long-term sustainability of plant and animal communities. **Guidelines (TIMB-FW-GDL)** 02 On lands suitable for timber production, reforestation should be designed to achieve stocking levels, spatial arrangements, and species composition to allow for long-term resilience of the developing forest, while considering potential future plantation management, carbon carrying capacity, and climate change adaptation. Competing vegetation, fuel levels, and fire risk should be managed to provide for the long-term survival and vigor of reestablishing forests as they move toward maturity. **Goals (FIRE-FW-GOAL)** 02 Base fire management on an all lands risk-based approach in planning and decision making that is responsive to the latest fire and social sciences and is adaptable to rapidly changing conditions, including climate change. All Riparian Conservation Areas **Desired Conditions (MA-RCA-DC)** 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution and have adjusted for climate change. **Objective (MA-RCA-OBJ)** 01 Restore the structure and composition of at least 400 acres in riparian areas within 10 years following plan approval, emphasizing riparian areas that face the most risk from large-scale high-intensity fire, past fire exclusion, or accelerated flooding events associated with climate change.

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
			Desired Conditions (TERR-ALPN-DC) 03 Subalpine woodlands are resilient to insects, diseases, fire, wind, and climate change. 05 Alpine ecosystems are resilient to climate change, and fires are small and occur infrequently. **Desired Conditions (TERR-FW-DC)** 02 Vegetation structure and composition provide ecosystem resilience to climate change and other stressors including altered fire regimes, drought, and flooding in riparian systems. **Desired Conditions (RCA-SPR-DC)** 02 Springs are resilient to natural disturbances, groundwater diversions, and changing climate conditions. Springs function across the landscape within their type and water availability. 03 Springs and associated streams and wetlands have the necessary soil, water, and vegetation attributes to be healthy and functioning at or near potential. Water flow is similar to historic levels and persists over time, within constraints of climate change. **Desired Conditions (RCA-RIV-DC)** 01 Stream ecosystems, riparian corridors, and associated stream courses sustain ecosystem structure; are resilient to natural disturbances (such as flooding) and climate change; promote the natural movement of water, sediment and woody debris; and provide habitat for native aquatic

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Individual Evaluations - Plants

Background

Plant Species of Conservation Concern Categories

The Inyo National Forest has 105 botanical species of conservation concern. Many of these species have very low number of occurrences and/or very limited distribution. Regarding limited distribution, many plant species of conservation concern are endemic (i.e., exist only in one geographic region) to California, the Inyo National Forest, or even a single county. For example, Mono milk-vetch occurs only in Mono County and Ramshaw Meadows abronia occurs only in Tulare County. However, the relative rarity of a species alone does not constitute vulnerability. In analyzing persistence of a species, occurrence and distribution are factors included along with ecological conditions of habitat and the identified threats in the plan area. Because botanical species are non-mobile, identified threats to species with very low numbers of occurrences and/or very limited distribution need to be managed at sites where they exist in order to improve resilience to stochastic events (e.g., wildfire, flooding, and climate change) and provide for persistence over the long term. For these reasons, all Inyo National Forest plant species of conservation concern were categorized into three major groups for the persistence analysis.

Plant Species of Conservation Concern Categories:

- Category 1 botanical species are those species having one or two occurrences in the plan area, with identified threats to persistence, and the species occurs elsewhere.
- Category 2 botanical species are those species having low numbers of occurrences and/or limited distribution, and identified threats to persistence, in the plan area. Although some species are endemic to the plan area, many occur elsewhere but have more than two occurrences in the plan area.
- Category 3 botanical species are those species with sufficient numbers and distribution of occurrences and individuals within occurrences such that inadvertent loss of individuals or occurrences will not threaten population persistence and viability.

The term "occurrences" in this case is used to describe discrete clusters of individuals, tracked as element occurrences, by state natural heritage programs, including within the California Natural Diversity Database and as Natural Resources Manager Threatened, Endangered, Sensitive, and Proposed (NRM-TESP) Site ID's by the Forest Service. Element occurrences form the basis of quantification that drives global and state rankings of rarity (NatureServe.org)[10]. Protection of occurrences does not imply protection of all individuals within an occurrence.

Determination Outcomes

Determinations for the three categories of botanical species of conservation concern were determined from these possible outcomes as described above in the introduction:

1. The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the [Category Number] in the plan area. No additional species-specific plan components are warranted.
2. The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the [Category Number] in the plan area. Nonetheless,

[10] See references at the end of this section.

additional species-specific plan components have been provided for added clarity and/or measures of protection.

3. The ecosystem plan components may not provide the ecological conditions necessary to maintain a viable population of the [Category Number] in the plan area. Therefore, additional species-specific plan components have been provided. The combination of ecosystem and species-specific plan components should provide the ecological conditions necessary to maintain a viable population of the [Category Number] in the plan area.
4. It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the [Category Number] in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

The finding that a viable population will be maintained should not be construed to mean the agency believes there currently is a viable population for all 105 Inyo species of conservation concern, rather that the plan components should provide the ecological conditions necessary to maintain a viable population to the extent such a population currently exists or exists in the future.

Methodology

Each of the 105 botanical species of conservation concern from the Inyo National Forest are placed into one of three categories of species defined above based on the listed factors, as currently understood and summarized in the species of conservation concern rationales and associated best available scientific information (USDA FS 2018). One of the four persistence determinations then follow for individual species, based on category, and are displayed in Table F-26, along with key threats, habitats, and a summary of the plan components that are particularly important for providing for the persistence and viability of each species in the plan area. Plan components will not, and cannot, prevent all adverse impacts to individuals of the species, and have been designed to provide for viability of the species in the plan area. We outline the determination finding for each of the three categories of botanical species below, providing a species-specific example for each category. Persistence determinations are provided as species-specific paragraphs in order to facilitate understanding of the analytical approach used to categorize species and apply persistence determinations. The persistence determinations for each of the 105 plant species of conservation concern are displayed in Table F-26.

Category 1 Botanical Species

Determination 4: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of category 1 botanical species in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Category 1 botanical species are those species having one or two occurrences in the plan area, with identified threats to persistence, and the species has more occurrences outside the plan area. These species lack sufficient redundancy of individuals and distribution within the plan area to allow them to easily absorb and recover from adverse impacts of identified threats, including climate change and other stochastic events, and face risk of local extirpation. Since botanical species are non-mobile, they need to be protected at the sites where they exist. For these species, species-specific plan components are key to addressing identified site-specific threats, and for

ensuring that plant species of conservation concern are considered during project planning and implementation. For this reason, both forestwide and species-specific plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of Category 1 species within its range.

Narrative Example - *Potentilla pulcherrima* - beautiful cinquefoil
The only known occurrence of *Potentilla pulcherrima* in California, is on the Inyo National Forest, in Mono County, half a mile up the south fork of Crooked Creek. It occurs in high elevation sagebrush on moist soil over granite. Identified threats include grazing and erosion. Table F-26 lists the key ecological conditions and risk factors for *Potentilla pulcherrima*, and summarizes the plan components that support ecological conditions, mitigate for identified threats, and provide for persistence and contribute to maintaining a viable population. In addition, Table F-27 displays a general crosswalk of where plan components and other plan content apply to address threats and provide ecological conditions for viable populations of plant species of conservation concern.

Category 2 Botanical Species

Determination 3: The ecosystem plan components may not provide the ecological conditions necessary to maintain a viable population of the category 2 botanical species of conservation concern in the plan area. Therefore, additional species-specific plan components have been provided. The combination of ecosystem and species-specific plan components should provide the ecological conditions necessary to maintain a viable population of these botanical species in the plan area.

Category 2 species have a low number of occurrences and/or very limited distribution in the plan area. Many category 2 plant species of conservation concern are endemic to the Inyo National Forest. Rarity is a factor that is included along with ecological conditions of habitat and identified threats in the plan area, including stochastic events like climate change, wildfire, and flooding. Category 1 and 2 species face high risk of local extirpation because they lack sufficient redundancy of individuals and distribution to allow them to easily absorb and recover from such adverse impacts. For these species, the persistence of all occurrences is important to maintain population viability. Because botanical species are non-mobile, they need to be protected at the sites where they exist. For these species, species-specific plan components are key to addressing identified site-specific threats, and for ensuring that plant species of conservation concern are considered during project planning and implementation. Both forestwide and species-specific plan components are needed in order to provide the ecological conditions necessary to maintain viable populations of category 2 botanical SCC in the plan area.

Narrative Example - ***Allium atrorubens*** **var.** ***atrorubens*****, the Great Basin onion**
Allium atrorubens var. *atrorubens*, the Great Basin onion - three of nineteen CNDDB records are from the Inyo National Forest. This species occurs in mountain mahogany, subalpine, and pinyon-juniper habitats. Identified threats include grazing and mining. Table F-26 lists the key ecological conditions and risk factors for the Great Basin onion, and summarizes the plan components that support ecological conditions, mitigate for identified threats, and provide for persistence and contribute to maintaining a viable population. In addition, Table F-27 displays a general crosswalk of where plan components and other plan content apply to address threats and provide ecological conditions for viable populations of plant species of conservation concern.

Category 3 Botanical Species

Determination 2: The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the category 2 species in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

Category 3 species have sufficient numbers and distribution of occurrences, and individuals within occurrences, that inadvertent loss of individuals or some occurrences will not threaten population persistence and viability. They have a very low number of occurrences and/or very limited distribution in the plan area. Some category 3 plant species of conservation concern are endemic to the Inyo National Forest. As with Category 1 and 2 species, many species occurrences face site-specific threats. But for these species, ecosystem plan components should provide the ecological conditions necessary to maintain a viable population in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

Narrative Example - *Botrychium crenulatum* - scalloped moonwort
Botrychium crenulatum lives on saturated hard water seeps and stream margins, 1500-3600 m elevation in the high Sierra Nevada and eastern Sierra Nevada. Ten of seventy-four CNDDB records are from the Inyo National Forest. Identified threats include hydrologic alteration, trampling, unauthorized off-highway vehicle travel, and severe soil disturbance. Table F-26 lists the key ecological conditions and risk factors for the scalloped moonwort, and summarizes the plan components (ecosystem, at-risk species-specific) that support ecological conditions and mitigate for identified threats in order to provide for persistence and contribute to maintaining a viable population. In addition, Table F-27 displays a general crosswalk of where plan components and other plan content apply to address threats and provide ecological conditions for viable populations of plant species of conservation concern.

Forest Plan Components that Support Persistence

Forest-wide ecosystem plan components support natural ecological processes, functions, and biodiversity, and promote ecological conditions that are resilient to climate change and other stressors. Additional ecosystem plan components provide area-specific desired conditions and management direction, and are tailored to specific ecosystem types or management areas, including providing ecological conditions that support persistence of species of conservation concern in riparian conservation areas; habitat types that host many botanical species of conservation concern. Disturbance processes (such as fire) and management activities (such as grazing and recreation) are addressed by ecosystem and other plan components that consider effects to plant communities and/or species diversity.

Species-specific plan components provide additional forestwide guidance for at-risk species to promote healthy, resilient ecosystems that support functional plant and animal communities and self-sustaining populations of at-risk species. These plan components are particularly important to category 1 and category 2 botanical species of conservation concern because they address site-specific threats in occupied habitat. Species-specific plan components, including for special habitats, mitigate risk to persistence from land management activities, and provide guidance for addressing existing site-specific threats not related to project activities, while balancing the needs of at-risk species with other resource uses and ecological processes. In addition, species-specific potential management approaches suggest development of systematic and programmatic approaches to achieve conservation of species of conservation concern.

Determinations for All Botanical Species of Conservation Concern

Plan components related to plant species of conservation concern are similar for all the action alternatives. For some plan direction, there are slight differences in category of plan component between some action alternatives. For example, alternative B modified would strengthen some plan direction for plant species of conservation concern by elevating an "Animal and Plant Species" guideline to a standard. Plan components for alternative B modified are used to display the primary plan components that address the forest plan to provide the key ecological conditions and address key threats in order to provide persistence Table F-26. This table provides a summary of key ecosystem habitats and threats. More detailed information on individual species can be found in the Rationales for Plant Species Considered for Designation as Species of Conservation Concern (USDA 2018).

Table F-26. Persistence determinations for Inyo National Forest botanical species of conservation concern, with key ecological conditions and risk factors for each species, and the plan components that mitigate those risk factors, provide for persistence and contribute to maintaining a viable population of each species of conservation

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Abronia alpina	3	2	Subalpine, dry forb, meadow edges (loose granitic gravel and sand)	Conifer encroachment, hydrologic alteration, climate change; very rare	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) FIRE-FW-GDL (06) WTR-FW-DC (01) MA-RCA-DC (02) WTR-FW-DC (01) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Agrostis humilis	3	2	Alpine, meadow	Climate change and related hydrologic alteration; social trails in meadows; packstock	TERR-FW-DC (02, 03, 05) WTR-FW-DC (01) TERR-ALPN-DC (05) RANG-FW-STD (07) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) MA-RCA-DC (02) MA-RCA-GDL (02) MA-RCA-STD (12) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Allium atrorubens var. atrorubens	3	2	Mountain mahogany, subalpine, pinyon-juniper	Grazing; mining	TERR-FW-DC (02, 03, 05) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) GEO-FW-DC (01) TERR-MOMA-DC (01, 02) TERR-ALPN-DC (03) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Astragalus cimae var. sufflatus	3	2	Pinyon-juniper	Invasive species,; one occurrence known in plan area	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) INV-FW-DC (01) INV-FW-GOAL (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Astragalus inyoensis	2	3	Pinyon-juniper	Mining, unauthorized OHV travel	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) GEO-FW-DC (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Astragalus johannis-howellii	3	2	Sagebrush, alkali flat (ash or pumice)	Grazing	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-SH-STD (01) FIRE-FW-GDL (06) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02)
Astragalus kentrophyta var. elatus	3	2	Subalpine, mountain mahogany, pinyon juniper	Climate change, recreation, small occurrence numbers, soil degradation	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) WTR-FW-DC (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) TERR-MOMA-DC (01, 02) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Astragalus lemmonii	3	2	Sagebrush, moist alkaline meadows or lakeshores	Grazing, hydrologic alteration, few occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) FIRE-FW-GDL (06) WTR-FW-DC (01) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RANG-FW-STD (07) MA-RCA-DC (02) MA-RCA-STD (12) MA-RCA-GDL (02) RCA-MEAD-DC (02) RCA-LPP-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Astragalus lentiginosus var. kernensis	2	3	Subalpine, dry forb, lodgepole, meadows	Unauthorized OHV travel, climate change, drought, grazing	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) TERR-LDGP-DC (01, 02) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) WTR-FW-DC (01) MA-RCA-DC (02) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) FIRE-FW-GDL (06)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Astragalus monoensis	3	2	Jeffrey pine, sagebrush, dry forb, pumice flats	Unauthorized OHV travel, drought, grazing, limited distribution	TERR-FW-DC (02, 03, 05) TERR-MONT-DC (01, 02) TERR-JEFF-DC (01, 02) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) FIRE-FW-GDL (06) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) WTR-FW-DC (01) MA-RCA-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Astragalus ravenii	3	2	Alpine, subalpine	Climate change; very small occurrence numbers; fragile habitat	WTR-FW-DC (01) TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Astragalus serenoi var. shockleyi	3	2	Pinyon-juniper, xeric shrub/blackbrush	Mining, grazing, invasive species	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) TERR-XER-DC (01, 02, 03, 04) TERR-XER-STD (01) TERR-XER-GDL (01) GEO-FW-DC (01) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) INV-FW-DC (01) INV-FW-GOAL (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Astragalus subvestitus	2	3	Subalpine, dry forb	Grazing, OHV	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01) FIRE-FW-GDL (06) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Boechera bodiensis (Arabis b.)	3	2	Pinyon-juniper, sagebrush (granitic, rhyolitic, moisture accumulating microsites)	Climate change	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) FIRE-FW-GDL (06)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Boechera pendulina	3	2	Alpine	Climate change	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (05) WTR-FW-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Boechera pinzliae	3	2	Alpine, subalpine (granitic soils)	Climate change; small occurrences	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05) FIRE-FW-GDL (06)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Boechera shockleyi (Arabis s.)	3	2	Xeric shrub/blackbrush (rock outcrops, gravelly soil (generally dolomite)	Mining, unauthorized OHV travel	TERR-FW-DC (02, 03, 05) TERR-XER-DC (01, 02, 03, 04) TERR-XER-STD (01) TERR-XER-GDL (01) FIRE-FW-GDL (06) GEO-FW-DC (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Boechera tiehmii (Arabis t.)	3	2	Alpine	Climate change	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (05) WTR-FW-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Boechera tularensis	3	2	Subalpine or upper montane coniferous forest, meadow	Grazing, climate change	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) WTR-FW-DC (01) TERR-MONT-DC (01, 02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Botrychium ascendens	3	2	Subalpine, moist meadows, open woodland streams or seeps	Hydrologic alteration, trampling, unauthorized OHV travel, severe soil disturbance	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) WTR-FW-DC (01) MA-RCA-DC (02) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) MA-RCA-DC (02) MA-RCA-GDL (02) RCA-MEAD-DC (02) RCA-SPR-DC (01, 02, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Botrychium crenulatum	2	3	Subalpine, meadow, saturated hard water seeps and stream margins	Hydrologic alteration, trampling, unauthorized OHV travel, severe soil disturbance	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) WTR-FW-DC (01) MA-RCA-DC (02) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) MA-RCA-DC (02) MA-RCA-GDL (02) RCA-MEAD-DC (02) RCA-SPR-DC (01, 02, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Botrychium lineare	3	2	Subalpine, moist meadows	Hydrologic alteration, trampling, unauthorized OHV travel, severe soil disturbance, very small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) WTR-FW-DC (01) MA-RCA-DC (02) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) MA-RCA-DC (02) MA-RCA-GDL (02) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Botrychium minganense	4	1	Subalpine, meadow, open forest along streams or seeps	Hydrologic alteration, trampling, unauthorized OHV travel, severe soil disturbance, small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) WTR-FW-DC (01) MA-RCA-DC (02) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) MA-RCA-DC (02) MA-RCA-GDL (02) RCA-MEAD-DC (02) RCA-SPR-DC (01, 02, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Bruchia bolanderi	4	1	Alpine, subalpine (colonizes organic or mineral soil along stream banks, in and around meadows, springs, and fens)	Hydrologic alteration; recreation impacts in meadow, few occurrences	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05) FIRE-FW-GDL (06) MA-RCA-DC (02) MA-RCA-GDL (02) MA-RCA-STD (11) RCA-MEAD-DC (02) RANG-FW-STD (08) RCA-SPR-DC (01, 02, 03) WTR-FW-DC (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Calochortus excavatus	3	2	Sagebrush, xeric shrub/blackbrush, meadow (moist alkaline soils)	Grazing, hydrologic alteration, small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-XER-DC (01, 02, 03, 04) TERR-XER-STD (01) TERR-XER-GDL (01) FIRE-FW-GDL (06) MA-RCA-DC (02) MA-RCA-GDL (02) MA-RCA-STD (12) WTR-FW-DC (01) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RANG-FW-STD (07) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Calyptridium pygmaeum	3	2	Alpine, subalpine	Climate change; trampling	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05) WTR-FW-DC (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Carex davyi	4	1	Subalpine, meadow	Hydrologic alteration, grazing; one occurrence	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) WTR-FW-DC (01) MA-RCA-DC (02) MA-RCA-GDL (02) MA-RCA-STD (12) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RANG-FW-STD (07) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Carex duriuscula	4	1	Sagebrush, subalpine, meadow	Grazing, hydrologic alteration, two occurrences	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) WTR-FW-DC (01) MA-RCA-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Carex idahoa	4	1	Sagebrush, subalpine, meadow	Grazing, climate change, two occurrences	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) WTR-FW-DC (01) MA-RCA-STD (12) MA-RCA-GDL (02) RANG-FW-STD (07) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) MA-RCA-DC (02) MA-RCA-GDL (02) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Carex petasata	4	1	Pinyon-juniper, subalpine, meadow	Grazing, climate change, two occurrences	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) TERR-ALPN-DC (03) WTR-FW-DC (01) MA-RCA-DC (02) MA-RCA-STD (12) MA-RCA-GDL (02) RANG-FW-STD (07) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Carex praticola	4	1	Subalpine, meadow	Grazing, climate change, one occurrence	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) WTR-FW-DC (01) MA-RCA-DC (02) MA-RCA-STD (12) MA-RCA-GDL (02) RANG-FW-STD (07) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Carex scirpoidea ssp. pseudoscirpoidea	3	2	Sagebrush, subalpine	Grazing, climate change, small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) WTR-FW-DC (01) MA-RCA-STD (12) MA-RCA-GDL (02) RANG-FW-STD (07) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Carex stevenii	4	1	Alpine	Climate change; hydrologic alterations; two occurrences	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (05) WTR-FW-DC (01) MA-RCA-DC (02) MA-RCA-DC (02) MA-RCA-GDL (02) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Carex tiogana	3	2	Alpine, subalpine (coarse, wet, limey soils)	Climate change, recreation; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05) WTR-FW-DC (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) FIRE-FW-GDL (06) MA-RCA-DC (02) MA-RCA-GDL (02) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Carex vallicola	3	2	Sagebrush, subalpine	Hydrologic alteration, climate change, small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-ALPN-DC (03) WTR-FW-DC (01) MA-RCA-DC (02) MA-RCA-GDL (02) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Chaetadelpha wheeleri	3	2	Sagebrush, sand dunes	Soil degradation from unauthorized OHV travel and solar energy development; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) FIRE-FW-GDL (06) INV-FW-DC (01) INV-FW-GOAL (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Claytonia megarhiza	3	2	Alpine	Climate change; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (05) WTR-FW-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Cordylanthus eremicus ssp. kernensis	3	2	Alpine, subalpine	Grazing, recreation, climate change; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05) MA-RCA-STD (12) MA-RCA-GDL (02) RANG-FW-STD (07) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) WTR-FW-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Crepis runcinata spp. hallii	3	2	Sagebrush, alkali flat	Grazing, unauthorized OHV travel, hydrologic alteration, small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) FIRE-FW-GDL (06) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) WTR-FW-DC (01) MA-RCA-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Cuniculotinus gramineus (Chrysothamnus g.)	3	2	Mountain mahogany, subalpine, carbonate	Climate change; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-MOMA-DC (01, 02) TERR-ALPN-DC (03) FIRE-FW-GDL (06)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Cymopterus globosus	4	1	Sagebrush	Grazing, hydrologic alteration, very few occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) WTR-FW-DC (01) MA-RCA-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Dedeckera eurekensis	3	2	Xeric shrub/blackbrush, lower pinyon-juniper (carbonate)	Mining, recreation, invasive species; small occurrence numbers and limited distribution	TERR-FW-DC (02, 03, 05) TERR-XER-DC (01, 02, 03, 04) TERR-XER-STD (01) TERR-XER-GDL (01) INV-FW-DC (01) INV-FW-GOAL (01) FIRE-FW-GDL (06) GEO-FW-DC (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Draba californica	3	2	Sagebrush, alpine	Climate change	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) WTR-FW-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Draba monoensis	3	2	Alpine (moist gravel and rock crevices)	Climate change; few occurrences	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (05) WTR-FW-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Draba sharsmithii	3	2	Alpine	Recreation—trail construction and maintenance, trampling by hikers; climate change; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (05) WTR-FW-DC (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Dryopteris filix-mas	3	2	Subalpine	Threatened by climate change; hydrologic concerns due to possible drying of springs; few occurrences	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) WTR-FW-DC (01) WTR-FW-DC (01) MA-RCA-DC (02) RCA-SPR-DC (01, 02, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Ericameria gilmanii	4	1	Pinyon-juniper, subalpine	Invasive species, mining; few occurrences	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) TERR-ALPN-DC (03) GEO-FW-DC (01) INV-FW-DC (01) INV-FW-GOAL (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Erigeron compactus	3	2	Sagebrush, pinyon-juniper, carbonate, alkali flat	Invasive species, climate change, small occurrence numbers and limited habitat	TERR-FW-DC (02, 03, 05) FIRE-FW-GDL (06) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) INV-FW-DC (01) INV-FW-GOAL (01) WTR-FW-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Erigeron uncialis var. uncialis	3	2	Sagebrush scrub, subalpine, carbonate	Climate change; few occurrences and limited distribution	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-ALPN-DC (03) FIRE-FW-GDL (06)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Eriogonum alexandrae (E. ochrocephalum var. ochrocephalum)	3	2	Sagebrush, pinyon-juniper, caliche-covered clay soil mounds	Invasive species, trampling (wild horses/cattle), unauthorized OHV travel; very few populations,	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) FIRE-FW-GDL (06) INV-FW-DC (01) INV-FW-GOAL (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Eriogonum mensicola	3	2	Pinyon-juniper, sagebrush scrub	Mining, recreation, invasive species, small occurrences numbers	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) GEO-FW-DC (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) INV-FW-DC (01) INV-FW-GOAL (01) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Eriogonum wrightii var. olanchense	3	2	Alpine, subalpine (granitic soils)	Climate change; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05) WTR-FW-DC (01) FIRE-FW-GDL (06)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Goodmania luteola	3	2	Sagebrush	Grazing; very small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Greeneocharis circumscissa var. rosulata	3	2	Alpine, dry forb, subalpine	Grazing, livestock trampling, climate change; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) WTR-FW-DC (01) FIRE-FW-GDL (06)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Grusonia pulchella	3	2	Sagebrush, xeric shrub/blackbrush	–Grazing; few occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-XER-DC (01, 02, 03, 04) TERR-XER-STD (01) TERR-XER-GDL (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Hackelia brevicula	3	2	Sagebrush, subalpine	Grazing impacts concentrated in limited habitat; climate change; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-ALPN-DC (03) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) WTR-FW-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Hackelia sharsmithii	3	2	Sagebrush, subalpine	Recreation impacts along trails; small occurrences	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-ALPN-DC (03) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Helodium blandowii	3	2	Alpine, subalpine, wet montane meadows, fens, and seeps, alpine lakes	Hydrologic alteration, grazing, small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05) MA-RCA-DC (02) MA-RCA-STD (11,12) MA-RCA-GDL (02) RANG-FW-DC (01, 02, 03) RANG-FW-STD (07, 08) RANG-FW-GOAL (03) RCA-SPR-DC (01, 02, 03) RCA-LPP-DC (01) WTR-FW-DC (01) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Hesperidanthus jaegeri	3	2	Pinyon-juniper, subalpine, carbonate	Climate change; competition with invasive species; few occurrences and limited distribution	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) TERR-ALPN-DC (03) FIRE-FW-GDL (06) WTR-FW-DC (01) INV-FW-DC (01) INV-FW-GOAL (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Horkelia hispidula	3	2	Sagebrush	Grazing; climate change; limited distribution	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) WTR-FW-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Hulsea brevifolia	3	2	Subalpine, mixed conifer	Trampling, altered fire regime; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) TERR-DMC-DC (01, 02, 03) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-FW-OBJ (01)
Hulsea vestita ssp. inyoensis	4	1	Pinyon-juniper, sagebrush	Mining three occurrences	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) GEO-FW-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Ivesia campestris	2	3	Subalpine, meadow	Grazing	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Ivesia kingii var. kingii	4	1	Sagebrush, alkali flat	Grazing, unauthorized OHV travel, hydrologic alteration; one occurrence	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) FIRE-FW-GDL (06) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) WTR-FW-DC (01) MA-RCA-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Jamesia americana var. rosea	3	2	Alpine, subalpine	Climate change; trampling; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05) WTR-FW-DC (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Kobresia myosuroides (K. bellardii)	3	2	Subalpine, meadow	Historic mining and pack stock activities; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Ladeania lanceolata (Psoralidium lanceolatum)	3	2	Sagebrush, sand dunes	Wild horse, grazing; few occurrences	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) FIRE-FW-GDL (06) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Lomatium foeniculaceum ssp. inyoense	3	2	Sagebrush, subalpine	Soil degradation; climate change	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-ALPN-DC (03) WTR-FW-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Lupinus duranii	2	3	Jeffrey pine, sagebrush, dry forb, pumice flats	Unauthorized OHV travel, grazing, invasive species, road maintenance	TERR-FW-DC (02, 03, 05) TERR-MONT-DC (01, 02) TERR-JEFF-DC (01, 02) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) FIRE-FW-GDL (06) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) INV-FW-DC (01) INV-FW-GOAL (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Lupinus padre-crowleyi	3	2	Sagebrush, Jeffrey pine	Livestock trampling, altered fire regime; few occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-MONT-DC (01, 02) TERR-JEFF-DC (01, 02) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) TERR-FW-DC (08) FIRE-FW-DC (01) FIRE-FW-GOAL (01, 05, 10) FIRE-FW-GDL (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Mentzelia inyoensis	3	2	Pinyon-juniper, sagebrush (calcareous pumice)	Invasives; small occurrence numbers and limited distribution.	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) FIRE-FW-GDL (06) INV-FW-DC (01) INV-FW-GOAL (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Mentzelia torreyi	3	2	Sagebrush, pinyon-juniper, caliche-covered clay soil mounds, alkaline soils	Invasives, unauthorized OHV travel, grazing and trampling and limited distribution	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) FIRE-FW-GDL (06) INV-FW-DC (01) INV-FW-GOAL (01) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Monardella beneolens	3	2	Alpine, subalpine (metamorphic or granitic scree slopes)	climate change; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05) WTR-FW-DC (01) FIRE-FW-GDL (06)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Oreocarya roosiorum (Cryptantha roosiorum)	3	2	Alpine, subalpine (dry, rocky meadows on carbonate substrates in open bristlecone pine-limber pine forest)	Climate change; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05) FIRE-FW-GDL (06) WTR-FW-DC (01) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Oxytropis deflexa var. sericea	4	1	Subalpine, meadow and seeps	Grazing; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RANG-FW-STD (07) MA-RCA-STD (12) MA-RCA-GDL (02) MA-RCA-DC (02) MA-RCA-GDL (02) RCA-MEAD-DC (02) RCA-SPR-DC (01, 02, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Penstemon calcareus	3	2	Xeric shrub/blackbrush, carbonate	Invasive species, burros, one occurrence on the forest.	TERR-FW-DC (02, 03, 05) TERR-XER-DC (01, 02, 03, 04) TERR-XER-STD (01) TERR-XER-GDL (01) FIRE-FW-GDL (06) INV-FW-DC (01) INV-FW-GOAL (01) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Petrophytum caespitosum ssp. acuminatum (P. acuminatum)	3	2	Mountain mahogany, subalpine, pinyon-juniper (limestone or granite cliffs, in carbonate areas)	Competition by invasives; one occurrence on forest	TERR-FW-DC (02, 03, 05) TERR-MOMA-DC (01, 02) TERR-ALPN-DC (03) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) INV-FW-DC (01) INV-FW-GOAL (01) FIRE-FW-GDL (06)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Phacelia inyoensis	3	2	Sagebrush, meadows, alkaline seeps	Grazing, unauthorized OHV travel, very few occurrences	TERR-FW-DC (02, 03, 05) RCA-SPR-DC (01, 02, 03) FIRE-FW-GDL (06) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RANG-FW-STD (07) MA-RCA-DC (02) MA-RCA-STD (12) MA-RCA-GDL (02) RCA-MEAD-DC (02) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Phacelia monoensis	3	2	Pinyon-juniper (shrink-swell volcanic clay soils derived from rhyolite)	Hydrologic events; climate change	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) FIRE-FW-GDL (06)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Phacelia nashiana	3	2	Xeric shrub/blackbrush	Invasives; two occurrences	TERR-FW-DC (02, 03, 05) TERR-XER-DC (01, 02, 03, 04) TERR-XER-STD (01) TERR-XER-GDL (01) INV-FW-DC (01) INV-FW-GOAL (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Physaria ludoviciana	4	1	Sagebrush, caliche-covered clay soil mounds	Wild horses; two occurrences	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01) FIRE-FW-GDL (06) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Physocarpus alternans	3	2	Pinyon-juniper, carbonate	Invasive species, climate change; small occurrences	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) FIRE-FW-GDL (06) WTR-FW-DC (01) INV-FW-DC (01) INV-FW-GOAL (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Plagiobothrys parishii	4	1	Xeric shrub/blackbrush, moist meadow	Climate change, hydrological alteration, grazing, small occurrence numbers and limited habitat	TERR-FW-DC (02, 03, 05) TERR-XER-DC (01, 02, 03, 04) TERR-XER-STD (01) TERR-XER-GDL (01) WTR-FW-DC (01) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RANG-FW-STD (07) MA-RCA-DC (02) MA-RCA-STD (12) MA-RCA-GDL (02) RCA-MEAD-DC (02) RCA-SPR-DC (01, 02, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Polemonium chartaceum	3	2	Alpine	Climate change, grazing, recreation, small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (05) WTR-FW-DC (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) FIRE-FW-GDL (06)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Polyctenium williamsiae	3	2	Sagebrush	Climate change, limited habitat, grazing, unauthorized OHV travel, very small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) WTR-FW-DC (01) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Populus angustifolia	4	1	Pinyon-juniper, sagebrush, riparian-stream	Altered fire flood/tidal/hydrologic regimes; two occurrences	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) WTR-FW-DC (01) MA-RCA-DC (02) MA-RCA-DC (02) MA-RCA-GDL (02) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Potentilla morefieldii	2	3	Alpine, meadow/spring (carbonate)	Climate change, grazing, recreation	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (05) WTR-FW-DC (01) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) FIRE-FW-GDL (06) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RANG-FW-STD (07) MA-RCA-DC (02) MA-RCA-STD (12) MA-RCA-GDL (02) RCA-MEAD-DC (02) RCA-SPR-DC (01, 02, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Potentilla pulcherrima	4	1	Sagebrush, alpine (moist soil over granite)	Grazing, erosion, one occurrence	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-ALPN-DC (05) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01) FIRE-FW-GDL (06) MA-RCA-DC (02) MA-RCA-GDL (02) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Ranunculus hydrocharoides	4	1	Pinyon-juniper (stream bed)	Drought, diversions, channel clearing off plan area; in plan area, water management and horse trampling identified as potential threats; one occurrence	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) WTR-FW-DC (01) MA-RCA-DC (02) MA-RCA-STD (12) MA-RCA-GDL (02) RANG-FW-STD (07) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Sclerocactus polyancistrus	2	3	Sagebrush, xeric shrub/blackbrush	Horticultural collection; unauthorized OHV travel; grazing; insect herbivory	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-XER-DC (01, 02, 03, 04) TERR-XER-STD (01) TERR-XER-GDL (01) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Solorina spongiosa	4	1	Subalpine (seep)	Grazing, foot traffic/trampling; one occurrence	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RANG-FW-STD (07) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) MA-RCA-DC (02) MA-RCA-GDL (02) MA-RCA-STD (12) RCA-MEAD-DC (02) RCA-SPR-DC (01, 02, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Sphaeromeria potentilloides var. nitrophila	2	3	Sagebrush, alkali flat, meadow (wetlands)	Unauthorized OHV travel, grazing	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) FIRE-FW-GDL (06) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RANG-FW-STD (07) MA-RCA-DC (02) MA-RCA-STD (12) MA-RCA-GDL (02) RCA-MEAD-DC (02) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Sphenopholis obtusata	4	1	Sagebrush, pinyon-juniper (alluvial soil associated with riparian birch vegetation or with drier scrub habitat)	Grazing, hydrologic alteration, small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) MA-RCA-DC (02) MA-RCA-STD (12) MA-RCA-GDL (02) RANG-FW-STD (07) WTR-FW-DC (01) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Stipa divaricata	3	2	Sagebrush, pinyon-juniper	Grazing; climate change	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) WTR-FW-DC (01) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Streptanthus gracilis	3	2	Alpine, subalpine (granitic)	Hydrologic alteration, climate change recreational	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05) TERR-MONT-DC (01, 02) WTR-FW-DC (01) MA-RCA-DC (02) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01) FIRE-FW-GDL (06)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Streptanthus oliganthus	3	2	Pinyon-juniper- pine, sagebrush scrub	Grazing, mining, erosion	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) GEO-FW-DC (01) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Taraxacum ceratophorum	4	1	Subalpine (damp, open meadows)	Grazing; hydrologic alteration; three occurrences	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) WTR-FW-DC (01) MA-RCA-STD (12) MA-RCA-GDL (02) RCA-MEAD-DC (02) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RANG-FW-STD (07)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Tetradymia tetrameres	3	2	Sand dunes, xeric shrub	Threats include invasive species; unauthorized OHV travel; climate change; small occurrence numbers and limited distribution	TERR-FW-DC (02, 03, 05) TERR-XER-DC (01, 02) TERR-XER-STD (01) TERR-XER-GDL (01) INV-FW-DC (01) INV-FW-GOAL (01) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) WTR-FW-DC (01) RCA-LPP-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Thelypodium integrifolium ssp. complanatum	3	2	Pinyon-juniper, sagebrush, wetlands	Grazing and hydrologic alteration; few occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) MA-RCA-DC (02) MA-RCA-STD (12) MA-RCA-GDL (02) RANG-FW-STD (07) RCA-MEAD-DC (02) WTR-FW-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Thelypodium milleflorum	4	1	Sagebrush, xeric shrub/blackbrush, caliche-covered clay soil mounds	Invasive species, wild horse browsing, unauthorized OHV travel, vegetation management, climate change, small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) TERR-XER-DC (01, 02, 03, 04) TERR-XER-STD (01) TERR-XER-GDL (01) FIRE-FW-GDL (06) INV-FW-DC (01) INV-FW-GOAL (01) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03) WTR-FW-DC (01) TIMB-FW-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Townsendia leptotes	3	2	Alpine	Climate change	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (05) WTR-FW-DC (01)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Transberingia bursifolia ssp. virgata	3	2	Pinyon-juniper, subalpine, meadow	Grazing, hydrologic alteration,	TERR-FW-DC (02, 03, 05) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) TERR-ALPN-DC (03) WTR-FW-DC (01) MA-RCA-DC (02) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Species	Determination	Category	Key Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
Trichophorum pumilum	3	2	Subalpine, wet meadow (calcareous soils)	Hydrologic alteration, grazing,	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03) MA-RCA-DC (02) MA-RCA-GDL (02) MA-RCA-STD (12) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01) FIRE-FW-GDL (06) WTR-FW-DC (01) RANG-FW-STD (07) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) RCA-MEAD-DC (02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)
Trifolium dedeckerae (T. kingii ssp.dedeckerae)	2	3	Alpine, subalpine, sagebrush, pinyon-juniper (granitic soils)	Grazing, road maintenance and climate change;	TERR-FW-DC (02, 03, 05) TERR-ALPN-DC (03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) FIRE-FW-GDL (06) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) WTR-FW-DC (01) TERR-PINY-DC (01, 02, 03) TERR-PINY-GOAL (01, b, g) TERR-MONT-DC (01, 02)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04) TERR-SH-DC (01, 02, 03) TERR-SH-GOAL (01, 02) TERR-SH-STD (01)
Viola purpurea spp. aurea	3	2	Sagebrush	Grazing; unauthorized OHV travel; small occurrence numbers	TERR-FW-DC (02, 03, 05) TERR-SAGE-DC (01, 02, 03, 04, 05) TERR-SAGE-GOAL (01, b, g) RANG-FW-DC (01, 02, 03) RANG-FW-GOAL (03) REC-FW-DC (04, 08, 09, 12) REC-FW-GOAL (02) REC-FW-GDL (01, 03)	SPEC-FW-DC (01, 02, 03, 04) SPEC-FW-GOAL (03, 04) SPEC-FW-STD (01) SPEC-FW-GDL (04)

Crosswalk – Plant Species of Conservation Concern

Table F-27 displays a crosswalk to show how plan components meet plant species of conservation concern habitat needs and address threats. This table does not include all plan components that provide for persistence, but focuses on those providing key ecological conditions and mitigate threats.

Table F-27. Crosswalk between plant species of conservation concern, key ecological conditions, and key threats with primary plan components that provide for persistence

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
ALL plant species	TERR-FW-DC 02 Vegetation structure and composition provide ecosystem resilience to climate change and other stressors including altered fire regimes, drought, and flooding in riparian systems. 03 Functioning ecosystems retain their essential components, processes and functions. 05 Ecological conditions contribute to the recovery of threatened and endangered species, conserve proposed and candidate species, and support the persistence of species of conservation concern.	SPEC-FW-DC 01 Sustainable populations of native and desirable nonnative, plant and animal species are supported by healthy ecosystems, essential ecological processes, and land stewardship activities, and reflect the diversity, quantity, quality, and capability of natural habitats on the Inyo National Forest. These ecosystems are also resilient to uncharacteristic fire, climate change, and other stressors, and this resilience supports the long-term sustainability of plant and animal communities. 02 Habitats for at-risk species support self-sustaining populations within the inherent capabilities of the plan area. Ecological conditions provide habitat conditions that contribute to the survival, recovery, and delisting of species under the Endangered Species Act; preclude the need for listing new species; improve conditions for species of conservation concern, including addressing threats (e.g. minimal impacts from disease); and sustain both common and uncommon native species. 03 Land management activities are designed to maintain or enhance self-sustaining populations of at-risk species within the inherent capabilities of the plan area by considering the relationship of threats (including site-specific threats) and activities to species survival and reproduction. 04 The structure and function of the vegetation, aquatic and riparian system, and associated microclimate and smaller scale elements (like special features such as carbonate rock outcrops, fens, or pumice flats) exist in adequate quantities within the capability of the plan area to provide	SPEC-FW- Potential Management Approaches •Develop and implement a consistent, systematic, biologically sound program for plant species of conservation concern and their habitat so that Federal listing does not occur. •Incorporate the conservation of at-risk species into all program areas at appropriate times and scales, including but not limited to recreation, fire and fuels, vegetation management, minerals, range, engineering, and special uses.

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
		habitat and refugia for at-risk species with restricted distributions. SPEC-FW-GOAL 03 Work with the California Department of Fish and Wildlife (following the memoranda of understanding), Nevada Department of Wildlife, and U.S. Fish and Wildlife Service to restore and maintain essential habitat for at-risk species and implement other recovery actions according to species recovery plans. 04 Communicate and collaborate with other agencies, Tribes, landowners, and partners to maximize opportunities to improve conditions in the plan area for at-risk species and the habitats and ecological processes on which they depend for survival. SPEC-FW-STD 01 Design features, mitigation, and project timing considerations are incorporated into projects that may affect occupied habitat for at-risk species. SPEC-FW-GDL 04 Habitat management objectives or goals from approved conservation strategies or agreements should be incorporated, if appropriate, in the design of projects that will occur within at-risk species habitat.	
Alpine	TERR-ALPN-DC 05 Alpine ecosystems are resilient to climate change, and fires are small and occur infrequently.	NA	NA
Subalpine	TERR-ALPN-DC 03 Subalpine ecosystems are resilient to insects, diseases, fire, wind, and climate change. High-elevation white pines (whitebark pine, Great Basin bristlecone pine, limber pine, and foxtail pine) are healthy and vigorous, with a low incidence of white pine blister rust, and resilient to moisture stress and drought. White pine blister rust-resistant trees are regenerating and populations of high elevation white pines have the potential to expand above the tree line.	NA	NA

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
Special habitats	FIRE-FW-GDL 06 During wildfires, avoid fire management activities in **special habitats** except when necessary to protect life and property. This includes activities such as line construction, staging areas, safety zones, water drafting and camps. When conducting fire management activities near special habitats, take extra measures to avoid spread of invasive plants.	TERR-SH-DC 01 The integrity of special habitats is maintained or improved from current conditions. Composition, diversity, and structure are maintained in all areas, including those with multiple-use activities. 02 Microclimate or smaller scale habitat elements provide habitat and refugia for species with a specific geographic or restricted distribution. 03 Conditions remain suitable for long-term sustainability of the suite of native plants adapted to special habitats and their associated insect pollinators. TERR-SH-GOAL 01 Work cooperatively with researchers and interested parties to study, monitor and assist in appropriate restoration measures of special habitats. 02 Include the location of special habitats in the corporate geographic information system. TERR-SH-STD 01 At the project scale, evaluate and incorporate maintenance and enhancement needs for special habitats into project design and implementation.	TERR-SH-Potential Management Approaches •Consider special habitats as a management priority, particularly if at-risk species are present. Appendix B: proposed and possible actions Special Habitats Restore off-highway vehicle damage in pumice flats, caliche-covered clay soil mounds, and other special habitats, and continue monitoring of species of conservation concern in these special habitats. Monitor resources in alkali flats, caliche-covered clay soil mounds, and other special habitats to determine ecosystem function, and implement restoration actions if needed.
Wet/moist habitat	MA-RCA-DC 02 Riparian conservation areas have ecological conditions that contribute to the recovery of threatened and endangered species and support persistence of species of conservation concern as well as native and desired nonnative aquatic and riparian-dependent plant and animal species. MA-RCA-GDL 02 Minimize impacts from roads, trails, off-highway-vehicle trails and staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites that have been identified as contributing to degradation of water quality or habitat for aquatic and riparian-dependent species. RCA-MEAD-DC 02 Wetlands and groundwater-dependent ecosystems (including springs, seeps, fens, wet	NA	Appendix B: proposed and possible actions Aquatic and Riparian Ecosystems •Use vegetation treatments to restore the structure and composition of riparian areas and meadows where encroachment is impacting meadow function. •Restore nonfunctioning or functioning-at-risk riparian areas so they are in or moving toward proper functioning condition. Meadows •Design grazing allotment plans to move riparian areas and meadows towards the desired conditions. •Continue to work with partners to direct planning and implementation of meadow restoration projects

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
	meadows, and associated wetlands or riparian systems) support stable herbaceous and woody vegetative communities that are resilient to drought, climate change, and other stressors. Root masses stabilize stream channels, shorelines, and soil surfaces. The natural hydrologic, hydraulic, and geomorphic processes in these ecosystems sustain their unique functions and biological diversity.		where meadows have impaired hydrologic function.
fens	RANG-FW-STD (08) 08 In fen ecosystems, limit disturbance from livestock and pack stock to no more than 15 to 20 percent annually. Reduce disturbance further if a fen is nonfunctional or functional at risk with a downward trend. RCA-MEAD-DC (02) MA-RCA-STD (11)	NA	Appendix B: proposed and possible actions Springs and Seeps •For the limited portion of fens that are identified to be in a downward trend, use herding management strategies before using barriers to restrict livestock from accessing those fens.
Springs and seeps	RCA-SPR-DC 01 Springs provide sufficient water to maintain healthy habitats for native riparian and aquatic species. 02 Springs are resilient to natural disturbances, groundwater diversions, and changing climate conditions. Springs function across the landscape within their type and water availability. 03 Springs and associated streams and wetlands have the necessary soil, water, and vegetation attributes to be healthy and functioning at or near potential. Water flow is similar to historic levels and persists over time, within constraints of climate change.	NA	Appendix B: proposed and possible actions Springs and Seeps • Restore degraded spring sites back to providing functional habitat for spring-dependent species. • Reconstruct or restore riparian function to springs identified as not in proper functioning condition.
Lakes, ponds	RCA-LPP-DC 01 Natural lakes and ponds retain necessary attributes, such as adequate vegetation and large woody debris to function properly and support native biotic communities. Attributes include floodwater retention and groundwater recharge, stabilized islands and shoreline features, and diverse characteristics to provide for amphibian production, waterfowl breeding and biodiversity.	NA	NA

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
Sagebrush	TERR-SAGE-DC 01 The sagebrush type has a diversity of age classes, stand structure, cover classes and native understory composition. 02 Sagebrush ecosystems are resilient to fire and other disturbances including grazing, recreation, invasive species (including cheatgrass) and climate change. 03 Grazed areas have or are trending toward satisfactory soils condition, functional hydrology and biotic integrity. Sagebrush ecosystems contain all key elements and conditions, including sagebrush regeneration and recruitment, ecosystem productivity, native perennial grass and forb cover, biological soil crusts, and symbiotic fungal associations. 04 Open sagebrush habitat with no overstory trees, such as pinyon pine, juniper or Jeffrey pine, provides habitat connectivity for sagebrush-dependent species. Fire occurs within the natural range of variation, or in small extents, as a natural process, limiting encroaching conifer trees. 05 Where nonnative annual grasses exist in sagebrush vegetation communities, the native species persist with adequate structural and functional diversity including shrubs, perennial bunchgrasses, and forbs. TERR-SAGE-GOAL 01 Restoration projects following large-scale changes in sagebrush structure or species composition (type conversion to cheatgrass) from wildfires or other disturbances should consider: b. restoring habitat, including restoring connectivity; g. long-term maintenance of regional biodiversity in disturbed and adjacent undisturbed landscapes.	NA	TERR-SAGE-Potential Management Approaches •Restoration projects should apply design features to reduce impacts to biological soil crusts, when they are known to occur within the project area. Appendix B: proposed and possible actions Sagebrush •Reduce overstory encroachment of pinyon-juniper and Jeffrey pine within sagebrush stands. •Conduct vegetation treatments to diversify age-class structure of sagebrush stands. •Manage fire to limit fire size and intensity within sagebrush stands.
Pinyon-juniper	TERR-PINY-DC 01 Pinyon-juniper types have a mosaic of trees and open areas that provide wildlife habitat, contribute to functional soils, and are resilient to disturbances such as fire, invasive species and climate change.	NA	NA

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
	02 Fire frequency and severity is within the natural range of variation. 03 Plant litter and coarse woody debris are present in sufficient quantity to resist accelerated soil erosion and promote nutrient cycling, water retention, and the microclimate conditions necessary for pinyon seed germination. Biological soil crusts are present to improve nutrient cycling and stabilize soils, especially in sandier soils. TERR-PINY-GOAL 01 Restoration projects following large stand-replacing events (such as wildfire or climate change impacts) should consider: b. restoring habitat, including restoring connectivity; g. long-term maintenance of regional biodiversity in disturbed and adjacent undisturbed landscapes.		
Montane forest	TERR-MONT-DC 01 At the landscape scale, the Sierra Nevada montane landscape is a heterogeneous mosaic of patches of red fir forest, mixed conifer, lodgepole pine forests, Jeffrey pine forests, meadows and riparian areas. These ecosystem types occur in a complex mosaic of different densities, sizes, and species mix across large landscapes that vary with topography, soils and snow accumulation. The composition, structure, and function of vegetation make them resilient to fire, drought, insects and pathogens, and climate change. The mix of seral stage patches, and open versus closed canopied areas, varies by forest type as described in table 1 and table 2. Large and old trees are common in most seral stages throughout the landscape and in varying densities (see "Old Forest" section below). 02 At the landscape scale, fire is a key ecological process restoring and maintaining patchy fuel loads, and increasing heterogeneity and understory plant vigor, except in Jeffery pine and dry mixed conifer forests (see desired conditions specific to those forest types). Fires occur irregularly, generally every 15 to 100 years, averaging about every 40 years. Fires in this zone	NA	NA

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
	burn with low, moderate, or mixed severity with minimal patches of high severity (greater than 75 percent basal area mortality) rarely greater than 300 acres in size. The proportion of areas burned at high severity within a fire is generally less than 10 to 15 percent.		
Dry mixed conifer	TERR-DMC-DC 01 At the landscape scale, the dry mixed conifer vegetation type has a mosaic of patches of trees of varied sizes and ages. It is dominated by Jeffrey pine and white fir trees, with white fir densities dependent on climate and fire trends. 02 At the landscape scale, fire is a key ecological process, creating a diversity of vegetation types, lower surface fuels and diverse understory vegetation. Fires occur frequently, on average every 5 to 15 years, with mostly low and moderate severity. Patches burned at high severity (greater than 75 percent basal area mortality) are rarely greater than 200 acres, and the proportion of areas burned with high severity is generally less than 15 percent. 03 At the landscape scale, areas dominated by medium and large-diameter trees comprise more than 60 percent of the landscape. Overstory tree canopy cover is generally 30 percent but ranges widely from 10 to 60 percent of the landscape. Overstory tree canopy cover is generally 30 percent but ranges widely from 10 to 60 percent at a fine scale. Trees are denser in some locations, such as north-facing slopes and canyon bottoms, but in small patches in limited areas (less than 20 percent of the area). Vigorous shrubs cover 10 percent or more of the area, with density varying by aspect, slope, and soil type.	NA	NA
Red fir	TERR-MONT-DC 01 At the landscape scale, the Sierra Nevada montane landscape is a heterogeneous mosaic of patches of red fir forest, mixed conifer, lodgepole pine forests, Jeffrey pine forests, meadows and riparian areas. These ecosystem types occur in a complex mosaic of different densities, sizes, and species mix across large landscapes that vary	NA	NA

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
	with topography, soils and snow accumulation. The composition, structure, and function of vegetation make them resilient to fire, drought, insects and pathogens, and climate change. The mix of seral stage patches, and open versus closed canopied areas, varies by forest type as described in table 1 and table 2. Large and old trees are common in most seral stages throughout the landscape and in varying densities (see "Old Forest" section below). 02 At the landscape scale, fire is a key ecological process restoring and maintaining patchy fuel loads, and increasing heterogeneity and understory plant vigor, except in Jeffery pine and dry mixed conifer forests (see desired conditions specific to those forest types). Fires occur irregularly, generally every 15 to 100 years, averaging about every 40 years. Fires in this zone burn with low, moderate, or mixed severity with minimal patches of high severity (greater than 75 percent basal area mortality) rarely greater than 300 acres in size. The proportion of areas burned at high severity within a fire is generally less than 10 to 15 percent. TERR-RFIR-DC 01 At the landscape scale, the red fir forest type is part of a heterogeneous mosaic of tree species and vegetation structures (tree density, size, age and shrub cover), with patches of Jeffrey pine, lodgepole, other forest types, and meadows. It is dominated by red fir trees, with varying amounts of white fir, Jeffrey pine, western white pine, lodgepole pine and sometimes mountain hemlock. 02 Fire occurs as a key ecological process in red fir forests where it does not pose an unacceptable risk to life and property. Fire as an ecological process creates, restores, and maintains ecosystem resilience and increases understory plant vigor, heterogeneity, and habitat diversity. 03 At the landscape scale, areas dominated by medium and large-diameter trees and low to moderate canopy cover (between 10 and 60 percent) comprise most of the landscape. Trees are denser in some locations such as north-facing		

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
	slopes and canyon bottoms, near meadows, or where snow accumulates. Early seral vegetation, shrubs, grasses, herbaceous plants, tree seedlings or saplings, mostly occur in very small areas, intermixed within forest stand or patches. 04 At the landscape scale, shrubs, grasses and young trees grow in patches of dead and dying trees with abundant snags and large logs, providing complex early seral habitat.		
Jeffrey pine	TERR-MONT-DC 01 At the landscape scale, the Sierra Nevada montane landscape is a heterogeneous mosaic of patches of red fir forest, mixed conifer, lodgepole pine forests, Jeffrey pine forests, meadows and riparian areas. These ecosystem types occur in a complex mosaic of different densities, sizes, and species mix across large landscapes that vary with topography, soils and snow accumulation. The composition, structure, and function of vegetation make them resilient to fire, drought, insects and pathogens, and climate change. The mix of seral stage patches, and open versus closed canopied areas, varies by forest type as described in table 1 and table 2. Large and old trees are common in most seral stages throughout the landscape and in varying densities. 02 At the landscape scale, fire is a key ecological process restoring and maintaining patchy fuel loads, and increasing heterogeneity and understory plant vigor, except in Jeffery pine and dry mixed conifer forests (see desired conditions specific to those forest types). Fires occur irregularly, generally every 15 to 100 years, averaging about every 40 years. Fires in this zone burn with low, moderate, or mixed severity with minimal patches of high severity (greater than 75 percent basal area mortality) rarely greater than 300 acres in size. The proportion of areas burned at high severity within a fire is generally less than 10 to 15 percent. TERR-JEFF-DC 01 At the landscape scale, the Jeffrey pine type is part of a heterogeneous mosaic of shrublands, woodlands or other vegetation types. Forests are	NA	NA

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
	dominated by Jeffrey pine trees and are generally open. Open-canopied stands dominate the landscape, with generally less than 10 percent of the area having more than 40 percent canopy cover. Open canopies allow shade-intolerant Jeffrey pine tree regeneration. 02 At the landscape-scale, fire is a key ecological process, creating a diversity of vegetation types, lower surface fuels and diverse understory vegetation. Fires occur frequently, on average every 5 to 15 years, with mostly low and moderate severity. Patches burned at high severity (greater than 75 percent basal area mortality) are rarely greater than 200 acres, and the proportion of areas burned with high severity is generally less than 15 percent.		
Lodgepole pine	TERR-MONT-DC 01 At the landscape scale, the Sierra Nevada montane landscape is a heterogeneous mosaic of patches of red fir forest, mixed conifer, lodgepole pine forests, Jeffrey pine forests, meadows and riparian areas. These ecosystem types occur in a complex mosaic of different densities, sizes, and species mix across large landscapes that vary with topography, soils and snow accumulation. The composition, structure, and function of vegetation make them resilient to fire, drought, insects and pathogens, and climate change. The mix of seral stage patches, and open versus closed canopied areas, varies by forest type as described in table 1 and table 2. Large and old trees are common in most seral stages throughout the landscape and in varying densities. 02 At the landscape scale, fire is a key ecological process restoring and maintaining patchy fuel loads, and increasing heterogeneity and understory plant vigor, except in Jeffery pine and dry mixed conifer forests (see desired conditions specific to those forest types). Fires occur irregularly, generally every 15 to 100 years, averaging about every 40 years. Fires in this zone burn with low, moderate, or mixed severity with minimal patches of high severity (greater than 75 percent basal area mortality) rarely greater than	NA	NA

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
	300 acres in size. The proportion of areas burned at high severity within a fire is generally less than 10 to 15 percent. TERR-LDGP-DC 01 Lodgepole pine forests are highly variable throughout the landscape, occurring as open forests on dry sites at higher elevations, and as denser stands in pockets around meadows, lakes or where cold air accumulates. The lodgepole pine type is part of a heterogeneous mosaic of tree species with diverse structural conditions. It is dominated by lodgepole pine, with varying amounts of red fir, white fir, aspen, and sometimes white pine. 02 Fire occurs as a key ecological process in lodgepole pine forests where it does not pose an unacceptable risk to life and property. Fire as an ecological process creates, restores, and maintains ecosystem resilience and increases understory plant vigor, heterogeneity, and habitat diversity.		
Mountain mahogany	TERR-MOMA-DC 01 Mountain mahogany is composed of native shrub and understory species that reflect the natural range of variation for the site. This vegetation type has varying age classes and densities that protect against accelerated erosion, with 1 to 10 percent of the type in early seral grass and herbaceous cover, 5 to 20 percent in native herbs and early seral shrubs, and 70 to 95 percent dominated by mountain mahogany cover. 02 The fire return interval is appropriate to allow the soil seed bank of native species to be maintained over the short and long terms. Invasive nonnative plants do not dominate between fires.	NA	NA
Xeric shrub/blackbrush	TERR-XER-DC (01, 02) 01 Xeric shrub vegetation is a mosaic of diverse ecological types with native shrubs and grasses, commonly blackbrush, sagebrush, saltbush, goldenbush and horsebrush in various age classes and patch sizes.	NA	NA

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
	02 Vegetation conditions are resilient to natural and human disturbances, such as grazing, flooding, fire, invasive species, and climate change. TERR-XER-STD 01 Restoration projects in xeric shrub and blackbrush must include design measures to avoid damage to biological soil crusts. TERR-XER-GDL 01 Restoration projects in xeric shrub and blackbrush should include islands of untreated vegetation in project design to speed native species regeneration.		
Climate change (threat)	WTR-FW-DC 01 Adequate quantity and timing of water flows support ecological structure and functions, including aquatic species diversity and riparian vegetation. Watersheds are resilient to changes in air temperatures, snowpack, timing of runoff, and other effects of climate change.	NA	NA
Hydrological alteration (threat)	WTR-FW-DC 01 Adequate quantity and timing of water flows support ecological structure and functions, including aquatic species diversity and riparian vegetation. Watersheds are resilient to changes in air temperatures, snowpack, timing of runoff, and other effects of climate change. MA-RCA-DC 02 Riparian conservation areas have ecological conditions that contribute to the recovery of threatened and endangered species and support persistence of species of conservation concern as well as native and desired nonnative aquatic and riparian-dependent plant and animal species.	NA	NA
Grazing/riparian (threat)	MA-RCA-STD 12 Manage livestock grazing to attain desired conditions in riparian conservation areas. Where livestock grazing is found to be contributing to a decline in the function of riparian systems, modify grazing practices as prescribed in the Inyo Forest Supplement to the R5 Rangeland Analysis and Planning Guide. If adjusting practices is not	NA	NA

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
	effective, remove livestock from that area using appropriate administrative authorities and procedures. MA-RCA-GDL 02 Minimize impacts from roads, trails, off-highway-vehicle trails and staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites that have been identified as contributing to degradation of water quality or habitat for aquatic and riparian-dependent species. RANG-FW-STD 07 Within riparian conservation areas that are properly functioning or functional at risk with an upward trend, limit annual livestock disturbance to streambanks and shorelines of natural lakes and ponds (caused by trampling and trailing) from exceeding 20 percent of the stream reach, or natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. Allow no more than 15 to 20 percent disturbance if the riparian conservation area is functional at risk with a downward trend, as defined in the appropriate technical reports.		
Grazing (threat) - general and only PC's applying to **dry meadows**	RANG-FW-DC 01 Rangelands, along with grazable forestlands and woodlands, provide large areas of contiguous space supporting native vegetation that has the potential to be grazed. These grazable landscapes sustain biological diversity and ecosystem integrity and help to preserve the rural landscape and cultural heritage of the central, southern and eastern Sierra Nevada. 02 Forage, browse, and cover meet the needs of wildlife, and authorized livestock are managed in balance with available forage. Areas that are grazed have, or are trending toward having, satisfactory soils, functional hydrology, and biotic integrity. 03 Domestic livestock grazing maintains the desired rangeland vegetation types represented	NA	NA

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
	by diverse plant functional groups, species richness and diversity, and structure and condition of plant communities. RANG-FW-GOAL 03 Consider the impacts to animals and plants, recreation, watershed, and rangelands when designing rangeland improvements or structures, such as water storage structures.		
Altered fire regime	TERR-FW-DC 08 Fire occurs as a key ecological process in fire-adapted ecosystems where it does not pose an unacceptable risk to life and property. Fire occurs within an ecologically appropriate regime of frequency, extent, and severity, and enhances ecosystem heterogeneity and habitat and species diversity. FIRE-FW-DC 01 Wildland fires burn with a range of intensity, severity and frequency that allow ecosystems to function in a healthy and sustainable manner. Wildland fire is a necessary process, integral to the sustainability of fire-adapted ecosystems. FIRE-FW-GOAL 01 Reduce fuel accumulations, help maintain and protect habitat for a variety of species, reduce smoke from larger fires, provide added protection for communities, and restore fire on the landscape. These actions are also an integral part of achieving sustainable recreation, particularly by maintaining scenic attractiveness, integrity, and character. 05 Restore ecosystems to a more fire-resilient condition and lessen the threat of wildfire to communities. 10 Coordinate with researchers, partners, and Tribes to help achieve desired conditions in ecosystems that are experiencing (or may experience in the future) more frequent, severe, or large fires than the natural range of variation due to factors such as invasive annual grasses and changing climate. FIRE-FW-GDL	TERR-FW-OBJ Restore species composition and structure on at least 20,000 acres of vegetation within 10 to 15 years following plan approval.	TERR-FW-Potential Management Approaches •When determining the appropriate wildfire management strategy, use spatial support tools such as wildfire risk assessments, fire management operating plans, and the current Forest Service decision support system for wildfire management. Locations of special habitats and key habitat areas for at-risk species should be readily available in the current Forest Service decision support system for wildfire management ahead of fire season. •Where feasible and suitable, use grazing, mechanical treatment, prescribed fire, or wildfires managed to meet resource objectives to reduce vegetation buildup to lower the risk of unwanted wildfire. •Prioritize fuel treatments in areas that pose the greatest threat to communities and highly valued resources. •Use appropriate wildfire management techniques to limit impacts to sensitive habitat of at-risk species, while considering the safety of people.

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
	01 Use naturally ignited and prescribed wildland fires to meet multiple resource management objectives, where and when conditions permit and risk is within acceptable limits.		
Trampling/recreation (threat)	REC-FW-DC 04 Areas of the national forest provide for a variety of activities with minimal impact on sensitive environments and resources. 08 Dispersed recreation occurs in areas outside of high visitation, developed facilities or communities, and does not adversely impact natural or cultural resources. 09 Permitted recreation uses, such as recreation special events or guided activities, are consistent with recreation settings, protect natural and cultural resources, and contribute to the economic sustainability of local communities. 12 Trails provide access to destinations, provide for opportunities that connect to a larger trail system, provide linkage from local communities to the national forest, and are compatible with other resources. REC-FW-GOAL 02 Manage dispersed recreation activities when evidence of impacts to natural resources emerge or are causing damage. REC-FW-GDL 01 Avoid locating new recreation facilities within environmentally and culturally sensitive areas, such as at-risk species breeding habitat or at-risk plant species habitat. 03 Use integrated resource planning when designing projects to address impacts to at-risk species habitat and changing conditions in recreation settings.	NA	REC-FW-Potential Management Approaches •Redesign, restore, or rehabilitate recreation sites where recreation activities have caused unacceptable natural or cultural resource damage.
Mining	GEO-FW-DC 01 Mineral resources on National Forest System lands provide for public benefit, while minimizing adverse environmental effects on other forest resources from mineral exploration, development, and extraction.	NA	NA

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
Invasive species	INV-FW-DC 01 Terrestrial and aquatic invasive species are controlled or eradicated when possible, and establishment of new populations is prevented. INV-FW-GOAL 01 Coordinate and cooperate with local, State and Federal agencies and Tribes to manage and control invasive and nonnative species.	NA	INV-FW-Potential Management Approaches •Develop a forestwide treatment prioritization strategy for invasive plant species considering ecological impact, extent and location of populations, and effectiveness of available treatment methods. Appendix B: proposed and possible actions Invasive Species •Where invasive species are adversely affecting the viability of native species, work cooperatively with appropriate State and Federal wildlife agencies to reduce impacts to native populations. •Focus treatment efforts on high priority invasive species and infestations, while developing management goals for lower priority species and infestations. Prioritize areas such as wilderness, research natural areas, botanical areas, wild and scenic areas, and aquatic and riparian areas to maintain the integrity of native species and ecosystems. Prepare control and prevention plans for high priority invasive species, which promote early detection of new populations and rapid management response as an effective approach to minimize spread. •Plan and implement a new forestwide treatment program for invasive plant species, which expands treatment options, identifies treatment priorities, and includes an early detection-rapid response component.

Apply to:	Ecosystem plan components	Species-specific plan components	Additional plan content
Invasive species in wet meadows or riparian	MA-RCA-GOAL 02 Where invasive species are adversely affecting the persistence of native species, work with the appropriate State and Federal wildlife agencies work to reduce impacts of invasive species to native populations.	NA	NA
Road maintenance	NA	NA	Appendix B: proposed and possible actions Infrastructure •Naturalize or decommission unauthorized roads and system roads to create a more cost-effective road system and to restore natural resources impacted by roads. •Coordinate with local, State, and Federal agencies to mitigate impacts from community, highway, and interstate road reconstruction and to identify management needs.
Timber production - vegetation management	TIMB-FW-DC (02) 02 Production of timber contributes to ecological, social, and economic sustainability and associated desired conditions. A sustainable mix of forest products is offered under a variety of harvest and contract methods in response to market demand and restoration needs.	NA	NA

References

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Appendix G – Aquatic and Riparian Strategy

This appendix provides clarification on how the water, watersheds, and aquatic and riparian plan components of the Inyo National Forest's Land Management Plan are integrated and provide for a forestwide strategy with the intent of retaining, restoring, and protecting the processes and landforms that provide habitat for aquatic and riparian-dependent organisms, and produce and deliver high-quality waters for which the national forest was established.

Relationship of Strategy Elements

The forestwide aquatic and riparian strategy (strategy) integrates water, watersheds, and aquatic and riparian management direction for the Inyo National Forest. The strategy considers several integrated strategic and tactical elements: Forestwide plan direction for watersheds (chapter 2); **Riparian Conservation Areas** (RCAs) and **conservation watersheds**, which are management areas designated through forest planning for which there are plan components (chapter 3); and unit-level **monitoring** questions and indicators (chapter 4). Another element that informs program and project-level decisions, but is not included in a forest plan, is **watershed restoration,** which focuses on reestablishing watershed functions and processes and related biological, physical and chemical characteristics to support aquatic and riparian systems. **Priority Watersheds** are considered part of the strategy and are used as a short-term tactical approach to focus efforts. Other primary restoration guidance used by the Forest Service includes recovery plans for federally listed threatened or endangered species, rare species conservation strategies, and water quality restoration plans.

Relationship of Plan Components

The aquatic and riparian strategy adopts an approach focused on maintaining and restoring ecological integrity and dynamic processes across broad landscapes, based on best available science related to watershed dynamics.[11] Plan components were developed to maintain or restore watershed conditions so they are moving towards or are in concert with the natural range of variation.

Forestwide watershed direction is the cornerstone of the strategy, in that these components address the watershed conditions as a whole at the coarse, most-broad, scale. Conservation watershed direction is additive to the forestwide watershed direction, and only applies to those watersheds identified as conservation watersheds. This additional direction emphasizes the conditions in conservation watersheds that provide for connectivity of habitats for species of conservation concern and maintain the functioning condition of the watershed, which provide for high quality water for beneficial uses downstream. These plan components are also tied to the coarse, land scape-scale, level.

Plan direction for riparian conservation areas address the individual, site-specific, aquatic and riparian systems within the watershed. These components are used whenever the aquatic systems, as defined in Chapter 3, for these areas are present within a watershed. Aquatic and riparian-dependent resources receive primary emphasis in these areas and special management direction applies. Specifically, management activities in riparian conservation areas are designed to protect, restore, or enhance water quality and the ecological health and function of aquatic and riparian

[11] This strategy updates the Aquatic Management Strategy of the Sierra Nevada Forest Plan Amendment in two ways: It incorporates BASI and it supports requirements of the 2012 planning rule.

ecosystems and associated resources. These components are also additive to the forestwide direction, as both component for watersheds and riparian conservation areas would be used at the project-level. Riparian conservation area direction also functions at the ecosystem level (coarse filter) to represent and maintain the full range of aquatic and riparian ecological diversity. Riparian conservation area direction also applies within conservation watersheds.

Relationship between Priority Watersheds and Conservation Watersheds

Priority watersheds are also an element of the strategy. These watersheds are designated using the Watershed Condition Framework, a national assessment and reporting tool. Watershed Restoration Action Plans are developed and implemented over a 5 to 7 year period, and once completed, watershed managers move on to a new priority watershed. Priority watersheds are a short-term tactical approach to restoration across all habitat types in the national forest, depending on the need.

As opposed to a short-term approach to watershed restoration, conservation watersheds represent a long-term prioritization for maintenance and restoration of watersheds particularly focused on aquatic resources. Achievement of desired conditions could take one or more planning cycles.

Conservation watersheds may be identified as priority watersheds by the Inyo National Forest staff, if there are watershed condition framework indicators that result in some needed short-term restoration actions. Conservation watersheds do not need to be identified for restoration activities to occur because the functionality of these systems make them a priority for restoration. The designation of a watershed as a conservation watershed does not lead to a creation of a watershed restoration action plan, like a priority watershed. The development of a watershed restoration action plan is specific to priority watersheds only.

Priority watersheds for short-term actions and conservation watersheds for more long-term maintenance both help complete the aquatic and riparian strategy by highlighting areas on the Inyo that may need restoration efforts, leading to improvement of aquatic systems.

Conservation Watershed Descriptions

The following section provides information on the four conservation watersheds identified on the Inyo National Forest.

Conservation Watersheds Identified for the Inyo National Forest

Mono Lake Headwaters

- Lee Vining Creek-Frontal Mono Lake
- Walker Creek-Rush Creek
- Grant Lake-Rush Creek

Middle Fork San Joaquin River Headwaters

- Upper Middle Fork San Joaquin
- Middle Fork San Joaquin

Cottonwood-Crooked Creek Headwaters

- Cottonwood Creek
- Upper Wyman Creek

South Fork Kern River Headwaters

- Golden Trout Creek
- Lewis Stringer-South Fork Kern
- Mulkey Creek-South Fork Kern
- Coyote Creek-Kern
- Ninemile Creek
- Soda Creek-South Fork Kern
- Snake Creek-South Fork Kern
- Lost Creek-South Fork Kern
- Pine Creek-South Fork Kern

The following sections provide further detail and information on the conservation watersheds identified for the Inyo. This includes rationale on why these watersheds were chosen.

Mono Lake Headwaters

The Mono Lake Headwaters Conservation Watershed encompasses three HUC 12 watersheds: Lee Vining Creek-Frontal Mono Lake, Walker Creek-Rush Creek, and Grant Lake-Rush Creek and total approximately 92,000 acres (Figure G-1). These watersheds include major water courses such as Lee Vining Creek, Walker Creek, Parker Creek, and Rush Creek, which all flow into Mono Lake. The Mono Lake Headwaters Conservation Watershed includes both the headwaters and the outlet for these systems. Approximately 58 percent of this conservation watershed is within the Ansel Adams Wilderness. All three of the HUC 12 watersheds are rated as properly functioning under the Watershed Condition Framework.

Habitats within this area include low elevation sagebrush, pinyon-juniper, Jeffrey pine, aspen, lodgepole pine, and then moves into subalpine and alpine types. Meadows, riparian areas, and lakes are also present throughout the conservation watershed.

When determining the at-risk species present within the HUC 12 watersheds, special habitat considerations for sage-grouse, willow flycatcher, Mono Lake checkerspot, Yosemite toad, and bald eagle were considered. These species were considered because habitats for these species (1) only occur in these watersheds (Mono Lake checkerspot and willow flycatcher) or (2) are limited on the forest and the species occurs within these watersheds (sage-grouse, bald eagles). Suitable habitat within these areas offers connectivity for these species, which allows for dispersal of the species throughout the conservation watershed. These watersheds also offer suitable habitat to many plant species of conservation concern, including: Mingan moonwort, western single-spiked sedge, golden violet, mountain bent grass, scalloped moonwort, western valley sedge, Bodie Hills rockcress, Tiehms' rockcress, northern meadow sedge, fell-fields claytonia, Tioga Pass sedge, Davy's sedge, and Mono Lake lupine.

The beneficial uses identified for this conservation watershed include, recreation and irrigation uses and water flow into Mono Lake. Although beneficial uses of the water may not include drinking water, these creeks are important to maintaining water-levels in Mono Lake. Restoration activities along these creeks has led to the return of water flowing through previously dry channels and creation of wildlife habitat.

Middle Fork San Joaquin River Headwaters

The Middle Fork San Joaquin Headwaters Conservation Watershed contains two HUC 12 watersheds: Upper Middle Fork San Joaquin and Middle Fork San Joaquin (Figure G-1). This area totals approximately 48,600 acres, of which 92 percent is within the Ansel Adams and John Muir Wilderness areas. Minaret Creek, King Creek, Reds Creek, Crater Creek, and the Middle Fork of the San Joaquin River are the major water courses in this conservation watershed. These waterways, along with the multitude of lakes within this area, form the headwaters for the Middle Fork of the San Joaquin River, which flows southwest onto the Sierra National Forest. This conservation watershed only includes the headwaters, and not the outlet of the river. The Middle Fork of the San Joaquin River has been determined to be suitable and is currently being managed as a Wild and Scenic River (1991 Sierra National Forest Land and Resource Management Plan). Both of the HUC 12 watersheds are rated as properly functioning under the Watershed Condition Framework.

Habitats within this watershed are unique on the Inyo National Forest as they include west side Sierra Nevada vegetation types such as red fir, dry mixed conifer, and the Sierra Nevada montane zone in which old forest habitats can occur. This make the species present in these watersheds unique from the rest of the Inyo National Forest in that California spotted owl habitat only occurs in these west side vegetation types. At-risk species identified for this conservation watershed include: California spotted owl, marten, great gray owl, Yosemite toad, fell-fields claytonia, short-leaved hulsea, and Bolander's bruchia. These watersheds were chosen as conservation watersheds because they offer unique habitat for west side species occurring on the national forest.

The beneficial uses of this watershed include not only uses in the headwaters, mainly recreation uses, but also downstream for drinking water. These uses were essential in the determination of this area as a conservation watershed.

South Fork Kern River Headwaters

This conservation watershed includes several HUC 12 watersheds, including: Golden Trout Creek, Lewis Stringer-South Fork Kern, Mulkey Creek-South Fork Kern, Coyote Creek-Kern, Ninemile Creek, Soda Creek-South Fork Kern, Snake Creek-South Fork Kern, Lost Creek-South Fork Kern, and Pine Creek-South Fork Kern (Figure G-2). This is the largest conservation watershed on the Inyo at approximately 184,100 acres. About 89 percent of this watershed is located within the Golden Trout and South Sierra Wilderness areas. The major water courses within this watershed include, Golden Trout Creek, Mulkey Creek, Strawberry Creek, Cold Meadow Creek, Volcano Creek, Monache Creek, Ninemile Creek, Cold Creek, Soda Creek, Long Canyon Creek, Snake Creek, and the South Fork of the Kern River. This area is the headwaters for the South Fork of the Kern River, a designated wild and scenic river, which flows south onto the Sequoia National Forest.

All of these watersheds are rated as properly functioning, except for Soda Creek-South Fork Kern River, which rated as functioning at risk. Although this watershed does not meet the criteria listed in the previous section for establishing conservation watersheds, it was included in this conservation watershed because it is completely surrounded by functioning watersheds, is in the middle of the conservation watershed, and it provides habitat for essential at-risk species.

Habitats within this watershed are similar to that of the Middle Fork San Joaquin River Conservation Watershed, in that it includes some west side Sierra Nevada vegetation types. This area also includes very large meadow systems and connected water courses, which offer suitable habitat for at-risk species, such as golden trout and salamanders.

Given the large acreage and unique habitats and vegetation found within this area, many at-risk species were identified for this conservation watershed. This includes: California golden trout, western pearlshell, Kern Plateau salamander, California spotted owl, mountain yellow-legged frog, Ramshaw abronia, Father Crowley's lupine, rosette cushion cryptantha, field ivesia, Bodie Hills rockcress, Tulare rockcress, Sharsmith's stickseed, Kern Plateau milk-vetch, Dedecker's clover, sweet-smelling monardella, Olancha Peak buckwheat, slender moonwort, Mingan moonwort, scalloped moonwort, Sharsmith's stickseed, and Kern Plateau birds'-beak.

Beneficial uses of the water, specifically the South Fork of the Kern River, include recreation and irrigation on the Inyo National Forest and further downstream drinking water. These essential uses, as well as the unique habitats and species that occur in this area, were the main drivers that designated this as a conservation watershed.

Cottonwood-Crooked Creek Headwaters

The Cottonwood-Crooked Creek Headwaters Conservation Watershed is located in the White Mountains on the Inyo National Forest and includes two HUC 12 watersheds, Cottonwood Creek and Upper Wyman Creek (Figure G-3). This area totals approximately 62,700 acres, of which about 57 percent is within the White Mountains Wilderness. Another 12 percent is found within the Alternative B-modified proposed recommended White Mountain Wilderness Additions. The major water courses within this area include Cottonwood Creek, a designated wild and scenic river, Poison Creek, Crooked Creek, and Wyman Creek. Although these systems do not form into a larger river system, they drain into the Fishlake Valley and Deep Springs Valley on the eastside of the White Mountains. Both of these HUC 12 watersheds are rated as properly functioning under the Watershed Condition Framework.

Habitats within these areas include mostly sagebrush, pinyon-juniper, riparian corridors, springs, and bristlecone pine at the higher elevations in the subalpine and alpine zones. Terrestrial and aquatic at-risk species in this area include Paiute cutthroat trout, sage-grouse, and desert bighorn sheep. Although this could be considered low diversity for terrestrial and aquatic species, the abundance of at-risk plant species within this area was very high. This is most likely due to the number of endemic species found within the higher elevations of the White Mountains. Plant species include: horned dandelion, Poison Canyon stickseed, slender townsendia, Morefield's cinquefoil, western valley sedge, compact daisy, spiny-leaved milkvetch, White Mountains horkelia, blue pendent-pod oxytrope, beautiful cinquefoil, Idaho sedge, Pinyon Mesa buckwheat, foxtail thelypodium, Nevada ninebark, little bulrush, White Mountains draba, scalloped moonwort, Dedecker's clover, limestone daisy, western single-spiked sedge, and upswept moonwort. The diversity of at-risk plant species was one of the main drivers for designating this area as a conservation watershed.

Beneficial uses of water include recreation uses and irrigation, both on and off the national forest. The downstream beneficial uses occur in the Fish Lake Valley and Deep Springs Valley areas.

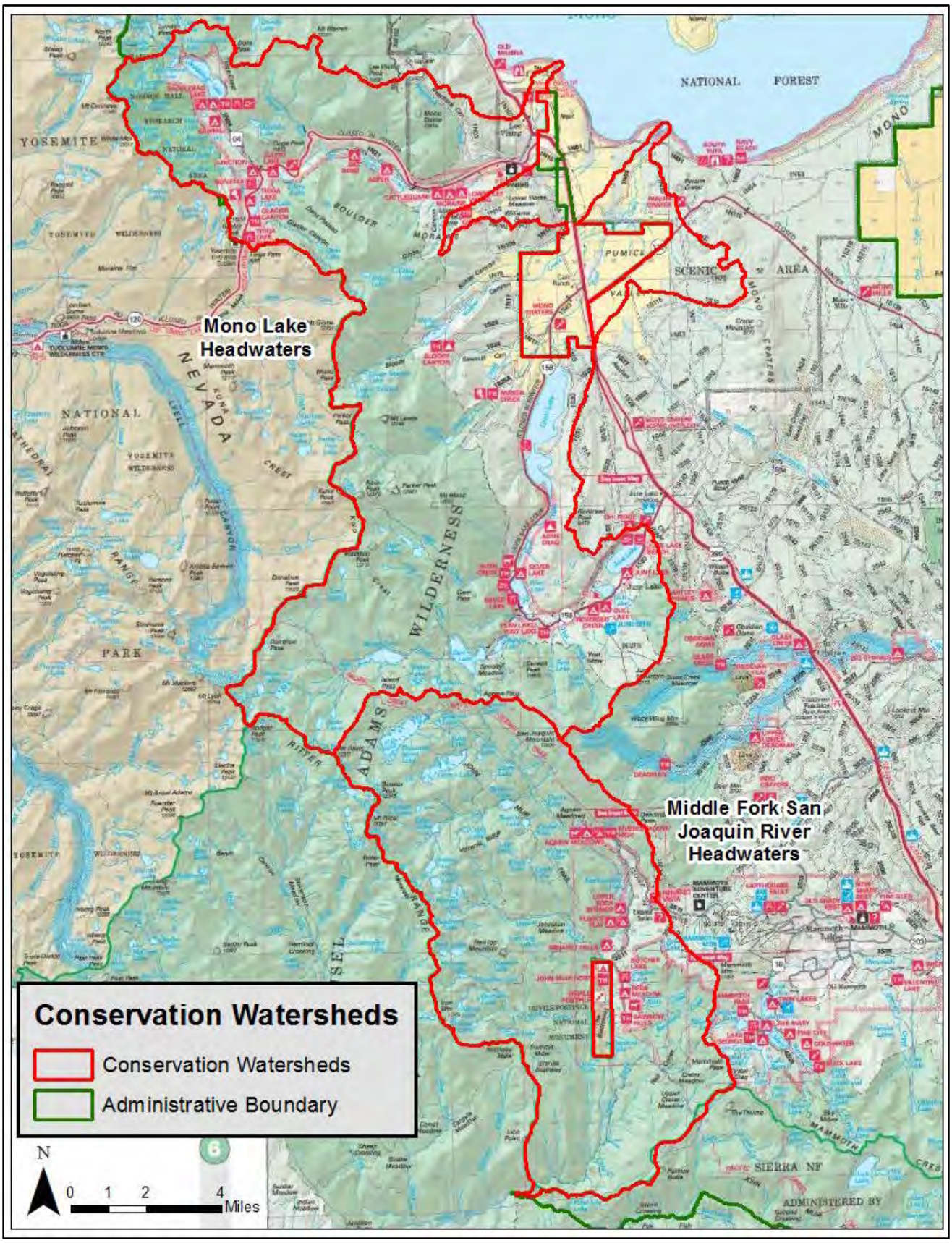

Figure G-1. Map of the Mono Lake Headwaters and Middle Fork San Joaquin Headwaters Conservation Watersheds

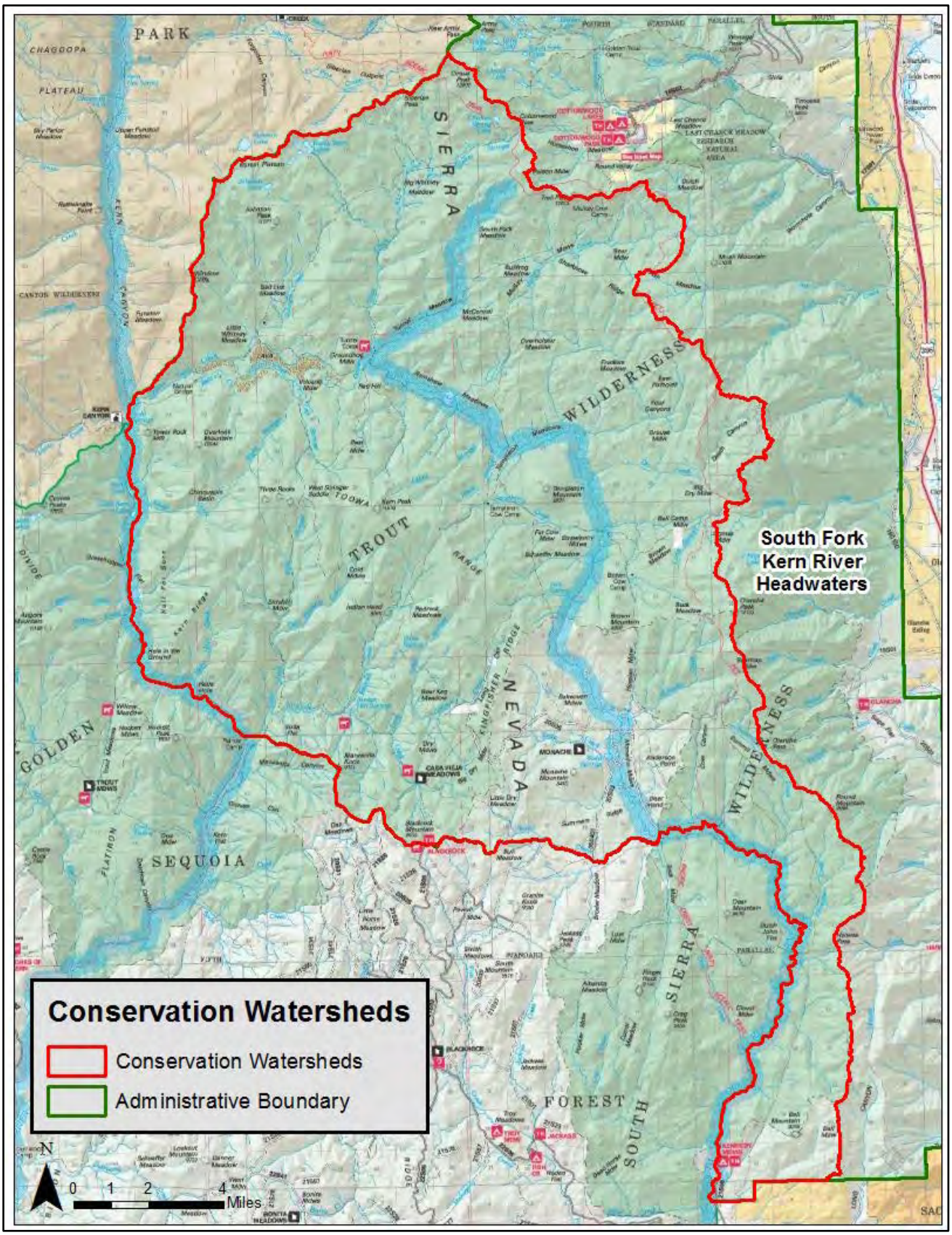

Figure G-2. Map of the South Fork Kern River Headwaters Conservation Watershed

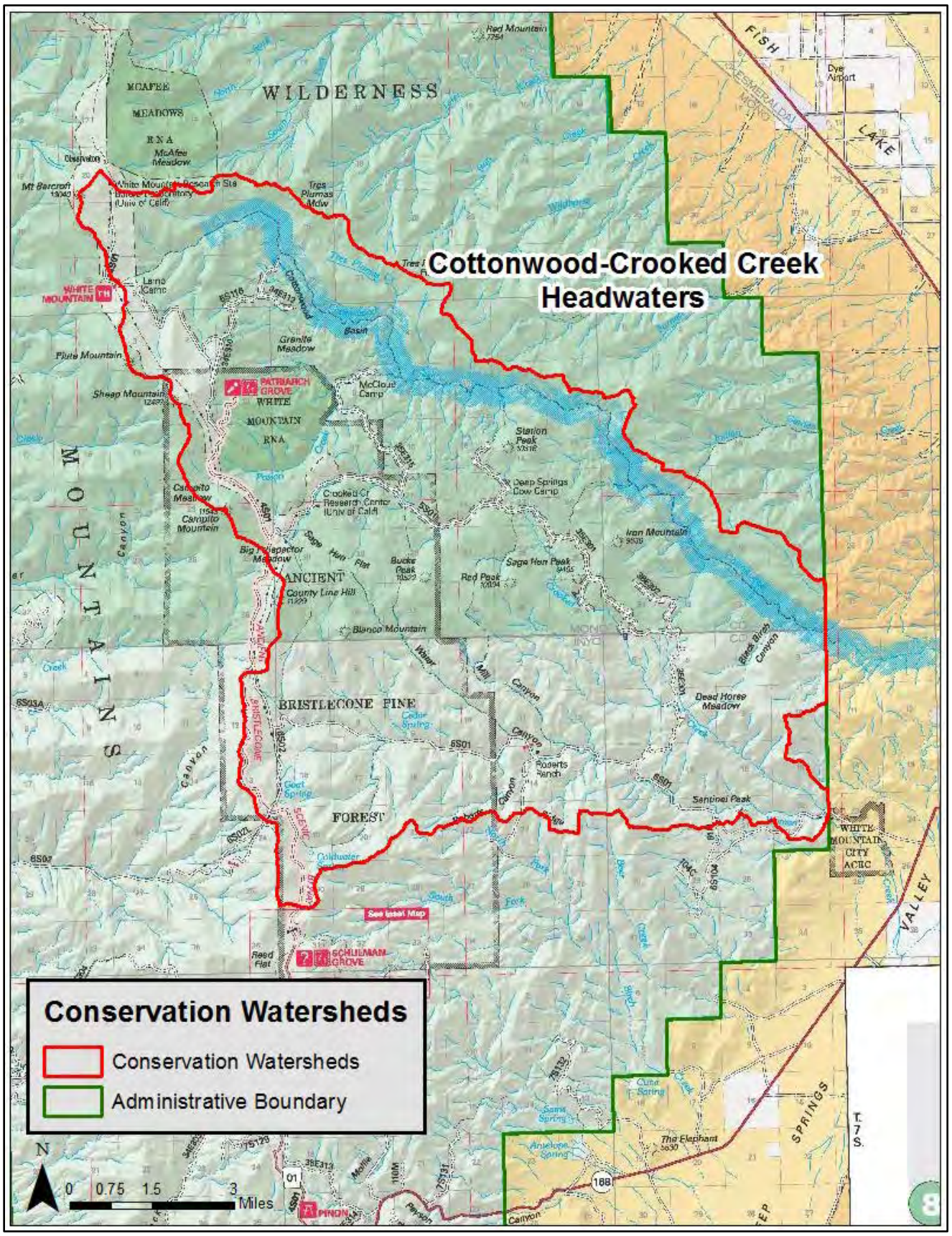

Figure G-3. Map of the Cottonwood-Crooked Creek Headwaters Conservation Watershed

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